



# **FIVE-YEAR PLAN** for the Waste Tire Recycling Management Program

*(2<sup>nd</sup> Edition Covering Fiscal Years 03/04-07/08)  
Report to the Legislature*



**DRAFT**

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# Executive Summary

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California is faced with the challenge of diverting or safely managing more than 33 million reusable and waste tires generated in the state each year. Another 2 to 3 million are imported from other states annually. Despite the fact that the state nearly doubled the number of waste tires recycled in California between 1991 and 2001, the number of waste tires generated each year continues to exceed the number of tires diverted from landfill disposal and stockpiling.

California has millions of waste tires illegally dumped or stockpiled. These stockpiles pose potential threats to the public health, safety, and environment, particularly when they are improperly maintained or catch fire. These negative environmental effects include habitat for pests and vectors, toxic smoke and residues, and contaminated air, water, and soil.

Within the last five years, this state has experienced two devastating waste tire fires: one at the Filbin stockpile in Westley and the other at the Royster stockpile in Tracy. These two fires burned more than 12 million waste tires, resulting in considerable environmental damage to the region and significant adverse impacts to local residents. The cleanup of the Westley tire fire took 3 years at a cost in excess of \$17 million. The Tracy tire fire site burned for over two years until the California Integrated Waste Management Board (IWMB) finally suppressed it. The estimated cost for this cleanup is \$9 million and is scheduled to begin in the spring of 2003.

Without significant expansion of existing markets for waste tires (such as rubberized asphalt concrete, playground mats and other surfacing, civil engineering applications, tire-derived fuel, and the development of new technologies that use waste tires), the tire stockpiles, both legal and illegal, and the environmental threat they pose, will continue to grow.

As a comprehensive measure to extend and expand California's regulatory program related to the management of waste and used tires, Senate Bill (SB) 876 (Escutia, Statutes of 2000, Chapter 838) was enacted. The measure's key provisions include the following:

1. Increasing the tire fee from \$0.25 to \$1.00 per tire (bringing California in line with other large states) until December 31, 2006, and reducing it to \$0.75 thereafter.
2. Extending the California tire fee to tires on new motor vehicles.
3. Revising the definition of "waste tire" and adding other definitions designed to provide regulatory relief for several thousand used tire dealers and waste tire recyclers.
4. Expanding the tire manifest system.
5. Increasing funding for recycling and recovery efforts.
6. Strengthening enforcement by making changes to the Waste Tire Hauler and Waste Tire Facility Permit Programs.
7. Developing a five-year plan to implement the provisions of SB 876.

One of the key provisions of the measure required the IWMB to adopt and submit to the Legislature a five-year plan on or before July 1, 2001, including proposed budget allocations. The plan must be updated every two years. The plan shall identify the tire programs and establish a hierarchy and performance criteria that will allow evaluation of the effectiveness of these programs. This document provides the revised plan that covers fiscal years 2003/04 – 2007/2008.

Nine major goals have been established for the implementation of SB 876 and for guidance in the development of this plan and IWMB's waste tire management program:

1. To eliminate all known illegal piles of waste tires in California.
2. To identify and track the used and waste tire flow in California.
3. To reduce the legal and illegal disposal of waste tires in California.
4. To the greatest extent possible, this plan will ensure a robust tire recycling infrastructure for the waste tire industry and enhance alternatives to disposal of California only waste tires.
5. To provide excellent customer service in a responsible and cost effective manner.
6. To implement this plan in a manner consistent with the principles of environmental justice that ensures that people of all races, cultures, and incomes are treated fairly and have equitable access to environmental benefits, and that no segment of the population bears a higher share of the risks and consequences of cumulative exposures or impacts of environmental pollution.
7. To enhance existing efforts to improve the environment along the California-Mexico border through establishment of a cooperative relationship with all levels of government along both sides of the border in addressing border-specific concerns including the stockpiling of waste tires near border cities, hauling and transport of tires, and sharing and disseminating environmental education materials.
8. To increase state agency purchases of tire related products including longer life tires, retread tires, recycle content tires, and products made from recycle tire materials.
9. To work with other states, localities and interested parties, and the tire industry on product stewardship issues related to tires in a manner similar to dialogues that have taken place or have begun for other products.

The plan is divided into program elements as they are identified in the legislation [Public Resources Code (PRC) Section 42855.5(b)]. These elements are:

1. Enforcement and regulations relating to the storage of waste and used tires.
2. Cleanup, abatement, or other remedial actions related to tire stockpiles throughout the State.
3. Research directed at promoting and developing alternatives to the landfill disposal of tires.
4. Market development and new technology activities for waste and used tires.
5. The waste and used tires hauler program and manifest system.

Within each of these program elements, the plan provides:

1. A description of the current program.
2. Objectives for the new expanded program.
3. A detailed program description with an accompanying budget projection.
4. A list of performance measures by which the program should be evaluated.

Overall, the Board proposes a comprehensive and ambitious program for the management of waste tires that is intended to comply with both the spirit and intent of SB 876.

The Plan describes performance measures for each program element. Appendix C contains the baseline data for fiscal year 2001/02 for the performance measures that were described in the original plan (September 2001).

# Introduction

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California is faced with the challenge of diverting or safely managing more than 33 million reusable and waste tires generated in the state each year. Another 2 to 3 million are imported from other states annually. As stated in the Board's publication entitled *Waste Tire Management Program: 2001 staff Report*, 24.9 million tires (74.8 percent) of the 33.3 million waste tires generated were diverted from landfill disposal or stockpiling. In 1990, IWMB estimated that 9.2 million waste tires (34 percent of the 27 million tires generated) were diverted from landfill disposal and stockpiling. Despite the fact that the state more than doubled the number of waste tires recycled in California between 1991 and 2001, the number of waste tires generated each year continues to exceed the number of tires diverted from landfill disposal and stockpiling.

Management of waste tires is a growing problem throughout the world. Different approaches to the problem have emerged. In Europe, land disposal of tires is being completely phased out and severe new restrictions on the use of tires as fuel are being implemented. Eleven states in the United States have also banned land disposal, while the rest of the states allow land disposal in some form. Many states place a priority on using tires for fuel to resolve waste tire problems while others, such as Arizona, place very heavy emphasis on recycling tires through use as rubberized asphalt. Although California bans the landfilling of whole tires, over 25% of waste tires are still buried after being cut up. In addition, 3.1 million tires are used as "alternative daily cover" in solid waste landfills.

California has millions of waste tires illegally dumped or stockpiled. These stockpiles pose potential threats to the public health, safety, and environment, particularly when they are improperly maintained or catch fire. These negative environmental effects include habitat for pests and vectors, mosquito breeding and spread of the West Nile virus, toxic smoke and residues, and contaminated air, water and soil. Many of these tires are dumped or stockpiled in low income and/or minority rural and urban settings, such as reservations, rancherías, and the communities along the border with Mexico.

Within the last five years, this state has experienced two devastating waste tire fires: one at the Filbin waste tire site in Westley and the other at the Royster waste tire site in Tracy. These two fires burned more than 12 million waste tires, resulting in considerable environmental damage to the region and significant adverse impacts to local residents.

Without significant expansion of existing markets for waste tires such as rubberized asphalt concrete, playground mats and other surfacing, civil engineering applications, tire derived fuel and the development of new technologies that use waste tires, the tire stockpiles, both legal and illegal, and the environmental threat they pose, will continue to grow.

The California Integrated Waste Management Board has established, through its *Integrated Waste Management Board Strategic Plan* (Strategic Plan), a number of priorities for addressing waste issues that are applicable to waste tires. Sustainable markets for the use of recycled tire products are vital to the success of recycling programs. Manufacturers can play a key role in the success of these programs through product stewardship efforts. The public can play a key role in minimizing waste and assuring that wastes are managed properly and the Board can assist through public outreach efforts.

The Board's Strategic Plan also addresses issues on environmental justice, state agency procurement of recycled-content products, and joint waste-management efforts along the California-Mexico border.



The Board is increasing its efforts on applying the principles of product stewardship to reduce the environmental effects of products throughout their lifecycle. The Board intends to initiate a national discussion with other states, tire industry and interested parties of product stewardship for tires in the next two years.

Additionally, the Board has an ambitious goal of a “zero waste California” where all parties strive to reduce, reuse and recycle all solid waste back into nature or the marketplace in a manner that is protective of health and the environment and honors the principles of the solid waste hierarchy.

Finally, the plan describes how the board will determine the program element’s effectiveness based on performance measures. These performance measures are listed at the end of each program element’s section. Appendix C contains the baseline data for fiscal year 2001/02 for the performance measures that were described in the original plan (September 2001).

# Legislative History

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The following section describes major legislation that affects the IWMB's Waste Tire Management Program.

**1989:** To address the need for better waste tire management in California, the Legislature enacted Assembly Bill (AB) 1843 (Brown, Statutes of 1989, Chapter 974) known as the California Tire Recycling Act, which promoted the recycling of the annual flow of waste tires as well as stockpiled tires. The act specified that the program promote and develop markets as an alternative to landfill disposal and stockpiling of whole tires. To accomplish these provisions, the act allowed the IWMB to award grants and loans to businesses, enterprises, and public entities involved in tire recycling activities. It also required the IWMB to develop waste tire facility regulations for the safe storage of waste tires, and established a permitting system for waste tire facilities. A \$0.25 fee on waste tires left for disposal funded these programs. The fee was to be deposited in the California Tire Recycling Management Fund and appropriated to IWMB annually by the Legislature.

**1993:** As an additional effort to ensure waste tires are disposed of at authorized sites, SB 744 (McCorquodale, Statutes of 1993, Chapter 511) was enacted, creating the Board's Waste Tire Hauler Registration Program. This program is also financed through the California Tire Recycling Management Fund.

**1996:** To change the point of collection from a return fee to a fee on purchased retail tires, AB 2108 (Mazzoni, Statutes of 1996, Chapter 304) was enacted. This bill also provided for any traffic or peace officer to enforce the waste tire hauler registration requirements, thus causing further reduction of the illegal hauling and disposal of waste tires.

**1998:** To extend the sunset date for the California Tire Recycling Act, including fee provisions, from June 30, 1999, to January 1, 2001, AB 117 (Escutia, Statutes of 1998, Chapter 1020) was enacted. AB 117 also required the IWMB to submit a preliminary and final waste tire report by May 1, 1999 and June 30, 1999, respectively, to the Governor and the Legislature. The resulting report, published in June 1999 and entitled *California Waste Tire Program Evaluation and Recommendations: Final Report* (AB 117 Report), included recommendations needed to address such waste tire issues as elimination of waste tire stockpiles; protection of public health, safety and the environment; and an increase in sustainable economic markets for waste tires in California.

**1999:** To provide a means to gain access for cleanup, abatement, and remediation purposes to a property that contains unlawfully disposed waste or used tires when the owner does not voluntarily consent to such access, SB 1055 (Bowen, Statutes of 1999, Chapter 292) was enacted, which added Public Resources Code section 42846.5. Specifically, a property owner is required to allow the CIWMB or its contractor reasonable access to perform activities necessary to clean up, abate or otherwise remedy illegally stored, stockpiled or accumulated waste tires on the property if an order setting civil liability has been issued and the Board finds that there is a significant threat to public health or the environment.

**1999:** The California Environmental Justice Act requires the Office of Planning and Research, in consultation with State agencies, local agencies, and affected communities to develop a State interagency environmental justice strategy that addresses any disproportionately high and adverse human and health or environmental effects of programs, policies, and activities on minority populations and low-income populations, SB 115 (Solis, Statutes of 1999, Chapter 690) was enacted. In addition, it requires each State agency to make the achievement of environmental justice part of its mission by identifying and

addressing disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in California.

**2000:** As a comprehensive measure to extend and expand California's regulatory program related to the management of waste and used tires, SB 876 (Escutia, Statutes of 2000, Chapter 838) was enacted. The measure's key provisions include the following:

1. Increasing the tire fee from \$0.25 to \$1.00 per tire (bringing California in line with other large states) until December 31, 2006, and reducing it to \$0.75 thereafter.
2. Extending the California tire fee to tires on new motor vehicles.
3. Revising the definition of "waste tire" and adding other definitions designed to provide regulatory relief for several thousand used tire dealers and waste tire recyclers.
4. Expanding the tire manifest system.
5. Increasing funding for recycling and recovery efforts.
6. Strengthening enforcement by making changes to the Waste Tire Hauler and Waste Tire Facility Permit Programs.
7. Developing a five-year plan to implement the provisions of SB 876.

**2001:** To provide cost recovery from property owners for costs and damages incurred by the Board, SB 649 (Committee on Environmental Quality, Statutes of 2002, Chapter 625) was enacted.

**2001:** To create deadlines for the Work Group on Environmental Justice and requires all boards, departments, and offices within the Cal/EPA to review their programs, policies, and activities and identify and address any gaps related to environmental justice SB 828 (Alarcon, Statutes of 2001, Chapter 765) was enacted.

**2002:** To encourage the use of rubberized asphalt concrete (RAC) in public works projects and assist with establishing markets for waste tires SB 1346 (Kuehl, Statutes of 2002, Chapter 671) was enacted. The measure provides authority to the Board, which may implement a program, until June 30, 2006, to award grants to cities, counties, districts, and other local government agencies for the funding of public works projects that use RAC. Grants shall be awarded to projects that are both projected to generate between 2,500 and 20,000 tons of RAC during the life of the project and use 20 pounds or more of crumb rubber per ton of RAC. To the extent possible, depending on the number of qualified applications and whether there is sufficient supply of crumb rubber, funds allocated shall be equal to 16 percent of the funds budgeted in the Five-Year Plan for the Market and Development and New Technology Activities.

# Summary of SB 876

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Senate Bill 876 is a comprehensive measure related to the management of waste and used tires. One of the key provisions of the statute requires IWMB to adopt and submit to the Legislature a five-year plan on or before July 1, 2001, including proposed budget allocations. The plan must be updated every two years. The plan shall identify the tire programs and establish a hierarchy and performance criteria that will allow evaluation of the effectiveness of these programs. The program elements that are identified in the legislation [Public Resources Code (PRC) Section 42855.5(b)] include the following:

- Enforcement and regulations relating to the storage of waste and used tires.
- Cleanup, abatement, or other remedial actions related to tire stockpiles throughout the State.
- Research directed at promoting and developing alternatives to the landfill disposal of tires.
- Market development and new technology activities for waste and used tires.
- The waste and used tires hauler program and manifest system.

The bill included a statement of legislative intent as follows:

- (1) Implement many of the enforcement, market development, administrative, and technical recommendations outlined in the California Integrated Waste Management Board's recent report on California's waste tire recycling enhancement program.
- (2) Encourage tire manufacturers to promote the use of retreaded and longer-lasting tires, as well as develop recycled-content rubber tires.
- (3) Stimulate waste and used tire market development activities, while cleaning up existing waste tire piles and enforcing waste and used tire laws.
- (4) Improve the current tire manifest system.
- (5) Increase state government's procurement and use of recycled-content tire products, such as rubberized asphalt concrete, crumb rubber products, and civil engineering applications.

Another key provision of the bill is that it identifies funding for the following specific purposes:

1. Clean up, abate, remove, or otherwise remediate tire stockpiles throughout the state. The IWMB shall spend no less than \$6.5 million dollars during each of the six inclusive fiscal years (FY) 01/02 – 06/07 on these cleanup activities [PRC Section 42889(e)].
2. Develop and enforce regulations related to the storage of waste tires and used tires; evaluate the usefulness of designating a local government as the enforcement authority of regulations related to the storage of waste and used tires. If IWMB designates a local government for that purpose, IWMB would provide funding [PRC Section 42889(d)].
3. Conduct studies and research directed at promoting and developing alternatives to the landfill disposal of tires [PRC Section 42889(f)].

4. Assist in developing markets and new technologies for used tires and waste tires [PRC Section 42889(g)].
5. Implement and operate a waste tire and used tire hauler program and manifest system tracking the movement of waste and used tires [PRC Section 42889(h)].
6. Evaluate the usefulness of providing financial incentives for citizens who report the illegal disposal of waste and used tires as a means of enhancing local and statewide waste and used tire enforcement programs [PRC Section 42889(d)].
7. Assist the Office of Environmental Health Hazard Assessment (OEHHA) in preparing a report regarding health effects of smoke from burning tires. The cost of preparing the report is limited to \$150,000 [PRC Section 42889(k)].
8. Administer the collection, refund, and audit of revenues in the fund not to exceed three percent of the total annual revenue [PRC Section 42889(b)].
9. Create an emergency reserve of not more than \$1,000,000 [PRC Section 42889(i)].
10. Administer overhead costs not to exceed five percent of the total annual revenue [PRC Section 42889(a)].
11. Transfer funds to Farm and Ranch Solid Waste Cleanup and Abatement Grant Program pursuant to Chapter 2.5 of Part 7 [PRC Section 42889(j)].

SB 876 also allows IWMB, after a hearing, to revoke, suspend, or deny a waste tire facility permit for up to three years under certain circumstances; for a period of not more than five years for chronic offenders that pose or may pose a significant risk to public health and safety or the environment or who have not shown reasonable progress toward correction.

# Five-Year Plan Development

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Under PRC Section 42885.5, IWMB is required to adopt a five-year plan establishing goals and priorities for the waste tire program and submit the plan to the Legislature by July 1, 2001. The plan is to include programmatic and fiscal issues as well as performance objectives and measurement criteria for the waste tire recycling program. The plan is to be revised and resubmitted to the Legislature every two years.

Many of the programmatic issues included in the plan were the subject of the report required by AB 117 (Escutia, Statutes of 1998, Chapter 1020), published in June 1999 and entitled *California Waste Tire Program Evaluation and Recommendations: Final Report* (AB 117 Report). During the development of the AB 117 Report, several workshops were held to obtain public input and industry comments. The AB 117 Report was then approved by IWMB, California Environmental Protection Agency (Agency), the Governor's Office, and the Legislature.

This report addresses the five program elements as identified in the bill [PRC Section 42885.5(b)]:

1. Enforcement and regulations relating to the storage of waste and used tires.
2. Cleanup, abatement, or other remedial actions related to tire stockpiles throughout the State.
3. Research directed at promoting and developing alternatives to the landfill disposal of tires.
4. Market development and new technology activities for waste and used tires.
5. The waste and used tires hauler program and manifest system.

The Five Year Plan is to include the hierarchy used by IWMB to maximize productive uses of waste and used tires and the performance objectives and measurement criteria used by IWMB to evaluate the success of its waste and used tire recycling program.

The hierarchy to be applied to the Five Year Plan has the following order of priority:

- Source Reduction;
- Recycling;
- Transformation (energy recovery, tire derived fuel);
- Disposal.

This hierarchy is to be used as guidance, but not a rigid formula, in establishing priorities for the waste tire program.

The Board in November 2001 developed the *Integrated Waste Management Board Strategic Plan* (Strategic Plan) that described key areas that will be addressed over the next three to five years. The Strategic Plan describes a shift in focus from the Assembly Bill 939 diversion goals to a broader, more systematic approach to managing the material used and created in manufacturing. This shift includes a commitment to working with manufacturers on product stewardship, so that we are working toward achieving a sustainable society and allowing for appropriate growth in ideas and methods that may result in a higher level of protection of

public health and safety and the environment by the State and its local enforcement agencies. Further, the Board is committed to protecting the environment and public health and safety in a manner that does not unfairly affect any group. The Five-Year Plan supports the efforts outlined in the Board's Strategic Plan.

Additionally, the plan shall describe each program element's effectiveness, based upon performance measures developed by IWMB.

Nine major goals have been established for IWMB's Waste Tire Management Program:

1. To eliminate all known illegal piles of waste tires in California.
2. To identify and track the used and waste tire flow in California.
3. To reduce the legal and illegal disposal of waste tires in California by increasing the reuse, recycling, and energy recovery of, or from, waste tires while protecting public health and safety and the environment.
4. To the greatest extent possible, this plan will ensure a robust tire recycling infrastructure for the waste tire industry and enhance alternatives to disposal of California only waste tires.
5. To provide excellent customer service in a responsible and cost effective manner.
6. To implement this plan in a manner consistent with the principles of environmental justice that ensures that people of all races, cultures, and incomes are treated fairly and have equitable access to environmental benefits, and that no segment of the population bears a higher share of the risks and consequences of cumulative exposures or impacts of environmental pollution.
7. To enhance existing efforts to improve the environment along the California-Mexico border through establishment of a cooperative relationship with all levels of government along both sides of the border in addressing border-specific concerns including the stockpiling of waste tires near border cities, hauling and transport of tires, and sharing and disseminating environmental education materials.
8. To increase state agency purchases of tire related products including longer life tires, retread tires, recycle content tires, and products made from recycle tire materials.
9. To work with other states, localities and interested parties, and the tire industry on product stewardship issues related to tires in a manner similar to dialogues that have taken place or have begun for other products.

The contents of this plan include the following six sections for each program element:

1. State of the Program
2. Directions/Recommendations from the AB 117 Report
3. Direction Provided by SB 876
4. The Plan
5. Performance Measures
6. Proposed Five-Year Budget

At the end of each section is a funding table developed by staff and summarizing the proposed expenditures within each element. Appendices A and B of this plan include a table and chart indicating proposed total expenditures for the entire Tire Recycling Management Fund. Appendix C contains the baseline data of fiscal year 2001/02 for the performance measures that were outlined in the original five-year plan (September 2001).

The plan also includes the following seven program-wide performance measures:

1. In conjunction with other environmental justice efforts of the Board, the tire program will evaluate its progress in informing the public of proposed actions, attempting to overcome barriers to meaningful participation in the decision making process, and providing technical assistance to communities on potential health and environmental impacts of tire related activities.
2. In concert with the California Environmental Protection Agency and the *Border 2012 US-Mexico Environmental Program*, the Board will develop a waste tire abatement plan with California and Mexico authorities focusing on stockpiles posing an immediate threat of fire.
3. Development by January 2004 of a training program/tracking system focusing on cross-border waste tire hauling. Also conduct tire hauler training workshops with Californian and Mexican stakeholders.
4. Development by January 2005 of a plan to encourage greater use of recycled content tire products by state and local agencies and assure that this plan aligns with the work of the State Agency Buy Recycled Campaign
5. Conduct periodic waste tire roundtable discussions with stakeholders to review progress of the waste tire program, solicit input from stakeholders and answer questions.
6. Include the principles of environmental justice as requirements in all tire program grants and contracts.
7. Complete biennial report to the Board on product stewardship issues.

The Special Waste and Market Development Committee held three public meetings on October 1, 10, and 17, 2002 to obtain input from stakeholders on the original five-year plan. The Special Waste and Market Development Committee used input from stakeholders to further develop the revision to the five-year plan. Additional comments were received at the IWMB's Special Waste and Market Development Committee workshops held on January 30, March 7, and March 24, 2003.



# Enforcement and Regulations Relating to the Storage of Waste and Used Tires

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## ***State of the Program***

Since the inception of IWMB's Waste Tire Enforcement Program in 1994, 894 illegal waste tire sites have been investigated. Of these sites, 656 now comply with the IWMB storage requirements or have had the waste tires removed. Enforcement efforts by the IWMB have resulted in the cleanup of approximately 6.1 million waste tires since 1994. The operator or property owner removed these tires as a direct result of the IWMB enforcement action.

Using historical cost data from State-funded tire cleanups, staff estimates that the IWMB's enforcement program has saved \$8.9 million in potential State costs to remove waste tires from illegal sites. Since 1994, the IWMB has issued 382 cleanup and abatement orders, 164 administrative complaints, and 34 criminal complaints. Additionally, the IWMB has imposed \$1,757,733 in fines against those owners and operators who have failed to comply with tire program requirements. To date, IWMB has collected approximately \$85,450 of the imposed fines. Additionally, IWMB has placed liens against property totaling \$532,201.

In FY 98/99, the scope of an Interagency Agreement with the California Highway Patrol (CHP) in the Waste Tire Hauler Program was expanded to include aerial surveillance to identify possible illegal disposal of tires. The aerial surveillance program continued during FY 99/00. The aerial photos provided by CHP enabled staff to identify 319 sites suspected of storing waste tires. Of these sites, IWMB staff has investigated 161 sites, resulting in various enforcement actions, including letters of violation, cleanup and abatement orders, and administrative complaints. [It is important to note that the 161 investigated sites identified by CHP are included in the 656 sites brought into compliance as indicated above.]

IWMB has an ongoing responsibility to develop regulations to implement, interpret and make specific legislation relating to the storage, disposal, and hauling of waste tires. IWMB has recently completed the rulemaking process for the waste tire storage, hauler, and monofill regulations. Rulemaking efforts for the hauler and permitting program are scheduled to begin in FY 01/02. IWMB is also responsible for taking appropriate action to remediate threats to the public health or safety, or the environment. The levels of enforcement action include the following hierarchical steps:

1. Letter(s) of violation
2. Cleanup and abatement order (unpermitted waste tire facilities)
3. Legal action (administrative hearings, local prosecutorial referral, or an Attorney General referral)

## ***Direction/Recommendations From the AB 117 Report***

One of the principal concerns raised during the AB117 Report meetings with stakeholders was the need for increased enforcement of the statutes and regulations. It was pointed out that failure to enforce, or inconsistent enforcement, creates major problems for legitimate businesses. Law-abiding businesses have difficulty competing with those that willfully ignore the rules and thereby avoid costs associated with the regulatory process.

Further, failure to enforce the waste tire hauling and storage regulations directly leads to the creation of illegal waste tire storage piles. The creation of illegal tire piles has led to many

different environmental problems, including mosquito and other vector outbreaks, and worst of all, long-lasting, uncontrolled tire fires such as those that occurred Tracy in August 1998 and Westley in September 1999.

The following recommendations were suggested by the AB117 Report workgroup (Recommendation #4):

1. Enhance Enforcement—Create a streamlined enforcement approach to the unlawful storage and transportation of waste tires, including continuing to work with CHP, and the creation of the Waste Tire Bounty Program, etc.
2. Local Agencies— Encourage local governments to more actively participate in the Waste Tire Enforcement Grant Program.
3. Ease Permit Requirements—Change definitions in statute to make the permitting process less demanding; remove tire-derived products from the permitting process after the products have been sold and removed from the manufacturing facility; tiered permitting, etc.

### **Direction Provided by SB 876**

PRC Section 42889:

*“Funding for the waste tire program shall be appropriated to the board in the annual Budget Act...for the following purposes:*

*(d) To pay the costs associated with the development and enforcement of regulations relating to the storage of waste tires and used tires. The board shall consider designating a city, county, or city and county as the enforcement authority of regulations relating to the storage of waste tires and used tires, as provided in subdivision (c) of Section 42850. If the board designates a local entity for that purpose, the board shall provide sufficient, stable, and noncompetitive funding to that entity for that purpose, based on available resources, as provided in the five-year plan adopted and updated as provided in subdivision (a) of Section 42855.5. The board may consider and create, as appropriate, financial incentives for citizens who report the illegal disposal of waste tires and used tires as a means of enhancing local and statewide waste tire and used tire enforcement programs.”*

### **IWMB’s Strategic Plan Goals and Objectives**

The Enforcement and Regulation Activities for Waste and Used Tires supports Goal 4 of the Board’s Strategic Plan as follows:

**Goal 4:** To manage and mitigate the impacts of solid waste on public health and safety and the environment and promote integrated and consistent permitting, inspection, and enforcement efforts.

**Objective 1:** Through consistent and effective enforcement or other appropriate measures, ensure compliance with federal and State waste management laws and regulations.

**Objectives 2:** Increase efforts to identify, evaluate, and address the impacts from waste tire and solid waste management techniques.

**Strategy A:** The Board requires that major permitted waste tire facilities be inspected once per year; minor permitted facilities are inspected once every 30 months. The increase in local enforcement grants to local jurisdictions has had a positive impact on identifying and evaluating the impacts of waste tire management throughout the state.

**Objective 4:** Intensify efforts to prevent illegal dumping and, where necessary, clean up illegally disposed waste and waste tire sites.

**Strategy A:** Referrals received from the CHP as part of the IWMB/CHP Interagency Agreement, have helped the Board to identify and cleanup previously unidentified sites throughout the state.

**Goal 6:** Continuously integrate environmental justice concerns into all of the Board's programs and activities, including administrative and budgetary decisions.

**Objective 3:** Ensure greater public and community participation, including low-income and minority populations, in the development, adoption, and implementation of environmental regulations, policies, and programs.

**Strategy B:** Seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation. Waste tire facility standards, hauler registration and manifest regulations and waste tire permitting requirements are applied and enforced equally and uniformly to all parties throughout the State of California regardless of income, population density, race or ethnic origin.

## ***The Plan***

### **Objectives**

1. Bring all permitted facilities into compliance with permit conditions by 2006.

The enforcement program proposes to enhance its efforts to bring facilities into compliance by performing more frequent inspections of permitted facilities and by completing enforcement actions in an expeditious manner, inspecting a greater number of facilities each year, and proceeding through the levels of enforcement actions in an expeditious manner.

2. Bring known illegal sites into compliance by 2006.

The enforcement program proposes to enhance its efforts to bring illegal sites into compliance by conducting more inspections of reported sites. The program will seek to enhance its ability to identify illegal sites by extending the Interagency Agreement with the CHP for aerial surveillance to detect sites and researching the feasibility of establishing a bounty program to report illegal dumping.

3. Increase local government participation in the enforcement of permit conditions.

The enforcement program proposes to expand the role of local government in the detection, inspection, and enforcement at waste tire sites through an increase in scope and funding of its Local Government Enforcement Grant Program and greater delegation of authority to qualified jurisdictions.

4. Strive for 100 percent compliance with state minimum standards at each waste tire facility/operation in the state.

The enforcement program proposes to assure that there is an integrated approach to permitting, inspection and enforcement that results in consistent application of all waste management standards and requirements.

Greater detail on program activities is given below.

### **Program Activities**

Early detection and local government participation are the keys to an effective enforcement program. The plan proposes that enforcement is most effective when it is two-pronged, involving participation from both State and local entities. This enforcement plan includes recommended funding for both State and local entities, as follows:

#### **State Enforcement**

State efforts currently include investigations and inspections of waste tire facilities and waste tire haulers throughout the state to insure compliance with legislation and regulations.

1. **Enhanced Enforcement:** All participants in the AB 117 and SB 876 workshops agreed that enhanced enforcement is important to bring all tire facility operators into compliance with legislative and regulatory mandates. Enforcement programs are staff-intensive; thus, hiring additional staff at the onset of the enhanced program is critical to its success. Currently, the IWMB's enforcement program consists of eight and a half staff, a manager, two supervisors, two legal staff, one legal assistant and a half time office assistant for a total of fifteen positions. Of these positions, four conduct inspections and enforcement activities, two are involved in the issuance of facility permits, one is involved in the evaluating and issuing local enforcement grants and one and a half manage information generated from enforcement program activities. Additional legal support has been provided from split-funded positions. The four enforcement inspectors conduct inspections and investigations of the storage, transportation, and disposal of waste tires throughout the state and the two Tire Permit staff process applications for waste tire facility permits and exclusions.

#### **Proposed Funding**

FYs 03/04-07/08. \$1,525,000 per FY

2. **California Highway Patrol:** As mentioned previously, IWMB has taken advantage of the resources of the CHP by conducting an aerial surveillance program to identify possible illegal disposal of tires. The aerial photos provided by CHP enabled staff to identify 319 sites suspected of storing waste tires. Of these sites, IWMB staff has investigated 161 sites, resulting in various enforcement actions, including letters of violation, cleanup and abatement orders, and administrative complaints. Staff proposes continued funding of the Interagency Agreement with the CHP by conducting further aerial surveillance to identify new sites suspected of storing waste tires.

#### **Proposed Funding**

FY 04/05.....\$200,000

3. **Waste Tire Bounty Program:** SB 876 states that IWMB may consider an incentive or "bounty" program for the general public to report unregistered haulers and illegal waste tire facilities. A reward could be provided to pay the reporting party when

there has been a successful criminal prosecution or administrative complaint against the offender.

If resources allow, staff will research the feasibility of a bounty program by contacting other agencies at State and federal levels and others who have utilized bounty programs such as Department of Fish and Game CalTIP program to evaluate programs similar in nature, including the appropriate payment (reward) and program administration (whether to diversify it to the local enforcement jurisdiction or maintain it at the State level). Staff will present the findings of its research to the Board so that a determination can be made as to how to proceed. Staff has updated the complaint form, which will be available on the Board's web page in addition to being available from any waste tire enforcement program staff. The form can be used by the public and businesses to report illegal tire disposal as well as any suspicious activities related to tire hauler registration and manifesting.

**Regulations/Legislation:** As previously indicated, IWMB has an ongoing responsibility to enforce legislation and to use regulations to implement, interpret, and make specific legislation relating to the storage, disposal, and hauling of waste tires. Although recommended by the AB 117 Report, specific language for tiered permitting and the standardization of tire storage measurement using passenger tire equivalents (PTE) was not included in SB 876.

The AB 117 Report workgroup felt these two issues were important additions to the California Tire Recycling Act and should be reconsidered in cleanup legislation or during the rulemaking process. As discussed during the SB 876 public meeting, the use of PTEs as a measurement appears the better course. The formula used to determine PTEs at a storage site would be developed during the rulemaking process. The following activities involve recommendations to amend legislation; or implement, interpret, and make specific legislation through the rulemaking process:

- a. **Tiered Permitting Program:** The AB 117 Report workgroup recommended the development of a tiered permitting system for waste tire facilities and operations that takes multiple factors into consideration and issues different levels of permits. The AB 117 Report workgroup also felt that tiered permitting would be advantageous, as IWMB has already established tiered regulations in place for transfer stations and compost facilities to account for the variations in health and safety risks associated with facilities and operations in different functional areas.

Current statutory allows for facilities storing fewer than 500 tires to not be regulated by the State. Permitted solid waste landfills and transfer stations that receive fewer than 150 tires per day (averaged annually) are not required to obtain a separate permit for tire storage, but are required to meet the storage standards. Tire dealers and auto dismantlers with fewer than 1,500 waste tires and tire retreaders with fewer than 3,000 waste tires on their property may be eligible for permit exclusions.

Cement manufacturers that burn waste tires for fuel can be exempted from waste tire facility permit requirements and are allowed to store up to a 30-day supply of fuel (tires) on their property, provided they meet specific criteria set forth in the PRC 42823.5(a). Minor waste tire facilities (storing fewer than 5,000 waste tires) and major waste tire facilities (storing 5,000 or more waste tires) are required to obtain a waste tire facility permit that is issued by IWMB.

Staff believes that the current tiered structure as described in this section is adequate for the regulated community and beneficial to the permitting program.

- b. **Passenger Tire Equivalents:** The accumulation and final disposition of waste tires has been the subject of much discussion. One group of stakeholders has advocated the counting of individual tires as a determining factor for permitting. Another group advocated the use of PTEs, where every 20–25 pounds of tire rubber count as one tire. The AB117 workgroup recommended that PTEs be used to determine permitting requirements for waste tire storage areas. Potential cleanup costs and environmental hazards (fire, vector control, etc.) are factors of the mass of tire rubber involved, not the number of tires. For example, a fire at a site with 1,000 giant earthmover tires poses a much greater risk than a fire at a site with 1,000 automobile tires.

The final regulations adopted by the Board on December 10, 2002 state that PTE's will be used to count only altered waste tires. If PTE's were used to count whole tires, numerous facilities storing small number of large tires would be required to obtain a waste tire facility permit. For this reason, the Board decided not to apply PTE's to whole tires when it adopted the final regulations.

### ***Local Enforcement***

IWMB currently has a grant program for local government entities with specified enforcement authority to assist in identifying illegal waste tire piles. These grants allow the local enforcement jurisdiction to conduct inspections and issue letters of violation, which inform the violator of the laws being violated and what needs to be done to rectify the situation. Participation in the program has been low, with approximately 18 different agencies funded since 1997. IWMB staff believes participation has been low for a variety of reasons: applicants felt there was not enough money, the tire problem was not considered a high priority, and local enforcement entities had a shortage of staff. Prior to SB 876, the waste tire enforcement grants have had an upper limit of \$100,000 per jurisdiction with the FY 99/00 program budget at \$500,000. To foster better working relationships with these local agencies, and provide improved, statewide enforcement, IWMB is providing long-term funding, training, and legal support.

In the future, local agencies will have a vital and expanded role in enforcement because IWMB does not have sufficient personnel resources 1) to conduct meaningful surveillance throughout California; and 2) to ensure compliance with the manifest and waste tire facility requirements for inspections at points of waste tire generation. IWMB will develop grant agreements providing for the local agencies to identify waste tire sites, conduct inspections, review waste tire hauler documents and issue letters of violation. Working together, IWMB and local agencies can oversee the flow of tires with greater regulatory scrutiny and greatly reduce the illegal disposal of waste tires.

In 2002, IWMB changed the grant program, making it non-competitive with a 12-month grant term. This change will provide funding stability for grantees and eliminate the necessity for the annual grant application process. During the first year of the Plan, FY 2001/02, \$2 million was allocated, but only eight jurisdictions applied, totaling less than \$900,000. During the second year of the Plan, FY 2002/03, with \$4 million allocated and changes approved by IWMB, 24 jurisdictions applied totaling over \$3,700,000. Beginning in FY 2003/04 and each year thereafter, \$6 million is projected as funding to maintain existing local jurisdictions and set up additional ones. At the SB 876 public meeting, stakeholders

identified a need for local jurisdictions to enhance their inspections and surveillance abilities through the use of high-tech surveillance equipment. Staff will consider allowing the expenditure as part of the grant award.

### **Proposed Funding**

FYs 03/04–07/08 \$6,000,000.....per FY

### ***Other Enforcement Efforts***

Administrative penalty enforcement actions will be prosecuted by the Board’s Legal Office to ensure uniformity of enforcement and expeditious processing because administrative civil penalties hearings occur at the State Office of Administrative Hearings. The Board is attempting to facilitate additional criminal referrals to local district attorneys through a two-year pilot grant program initiated in FY 2001/02 with the California District Attorney’s Association (CDAA). CDAA is providing an investigator and circuit prosecutor to pursue criminal and unlawful business practice actions. This activity will be evaluated during FY 2003/04 for continued funding. Any future funding for CDAA assistance could be included in the enforcement grant allocation or through the annual reallocation item of the unexpended tire funds.

## **Performance Measures**

To evaluate the program’s success in achieving its objectives, the following measures are proposed (baseline data will be collected during FY 01/02):

1. Increase the number of inspections conducted by program staff and local agency staff by 30 percent over the next three years.
2. Increase the proportion of successful legal actions (those resulting in fines or penalties awarded).
3. Track the number of documented violations to determine whether they are increasing or decreasing over time.
4. Track and report annually the number of illegal sites that are closed or become permitted.
5. Track number of newly discovered illegal sites to determine if occurrence is decreasing (through CHP surveillance or local enforcement) on an annual basis.
6. Increase the number of applications submitted in local government enforcement grant program.
7. Before the next biennial update of the five-year plan, conduct a performance review of enforcement efforts to determine whether adjustments should be made to enhance project selection and dissemination of results.

***Proposed Five-Year Budget for Enforcement and Regulations Relating to the Storage of Waste and Used Tires***

**Table 1: Budget for Enforcement and Regulations Relating to the Storage of Waste and Used Tires**

<b>Program Area</b>	<b>FY 03/04</b>	<b>FY 04/05</b>	<b>FY 05/06</b>	<b>FY 06/07</b>	<b>FY 07/08</b>
Enhanced Enforcement Staff	\$1,525,000	\$1,525,000	\$1,525,000	\$1,525,000	\$1,525,000
CHP	\$0	\$200,000	\$0	\$0	\$0
Enforcement Grants	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000
<b>Totals</b>	<b>\$7,525,000</b>	<b>\$7,725,000</b>	<b>\$7,525,000</b>	<b>\$7,525,000</b>	<b>\$7,525,000</b>



# Cleanup, Abatement, or Other Remedial Action Related to Tire Stockpiles Throughout the State

## State of the Program

Pursuant to PRC Section 42826, IWMB may perform any cleanup, abatement, or remedial work required to prevent substantial pollution, nuisance, or injury to the public's health and safety at waste tire sites where the responsible parties has failed to take appropriate action as directed by IWMB. These efforts may entail stabilizing piles until they can be removed, removal of all waste tires, and/or remediation of the site after removal of the tires. In general, these waste tire sites are referred to the Waste Tire Stabilization and Abatement Program once IWMB's Waste Tire Enforcement Program has exhausted enforcement efforts.

Since it began in 1994, IWMB has utilized contractors to remediate or stabilize illegal waste tire sites. To date, IWMB has awarded four contracts totaling approximately \$8.9 million. Since 1995, IWMB has removed more than 12.8 million illegal waste tires from 46 sites at an average removal cost of \$0.67 per tire for a total cost of nearly \$6.9 million. Of the 12.8 million illegal waste tires removed since 1995, approximately 77 percent went to a productive end use and 23 percent to landfills. While the number of sites remediated each year has remained almost constant, the cost of cleanup has varied significantly depending on the number of large projects undertaken that year.

**Table 2: IWMB Annual Remediation**

Year	No. of Sites	Remediation Cost	Total No. of Tires Removed	Average Cost Per Tire Per Year
1995	6	\$ 870,832	2,154,400	\$ .40
1996	6	\$ 389,487	411,436	\$ .95
1997	9	\$1,367,760	2,832,916	\$ .48
1998	8	\$2,726,196	4,488,325	\$ .61
1999	15	\$1,568,905	1,334,500	\$1.18
2000	5	\$1,690,000	\$1,920,500	\$0.88
2001*	0	0	0	0
2002	2	\$274,000	\$97,000	\$2.82**
<b>Totals</b>	<b>50</b>	<b>\$8,887,180</b>	<b>13,239,077</b>	<b>\$0.67</b>

\* In 2001 no short-term remediation projects were completed because all tire remediation resources were focused on the cleanup of the Westley tire fire site.

\*\* Complicated legal issues.

While the aim of IWMB is to stabilize all unsafe or environmentally hazardous tire piles until abatement can be completed, three large tire pile fires and several small blazes have occurred since the beginning of the program. In 1996, approximately 1.5 million tires burned at the Choperena waste tire site in Fresno. Seven million tires were consumed in 1998 at the fire at the Royster waste tire site in Tracy. In 1999, another five million tires were consumed at the fire at the Filbin waste tire site in Westley.

All of these sites have or will require IWMB-funded remediation, through contracts funded by the tire program.

The intent of the Local Government Waste Tire Cleanup Matching Grant Program is to create local partnerships, and partnerships with Native American reservations and rancherías, to facilitate the removal, transport, and disposal/reuse of waste tires from legacy tire piles and piles exceeding 500 tires. IWMB has issued Local Government Waste Tire Cleanup Grants for four fiscal years starting in FY 97/98. During this time, IWMB awarded 26 grants totaling \$874,468. Under these grants, local governments have remediated an estimated 346,806 illegal waste tires, as indicated in the following table.

**Table 3: Local Government Remediation Grants**

<b>Fiscal Year</b>	<b>Number of Sites</b>	<b>Number of Tires Remediated</b>	<b>Grant Award</b>
1997-1998	8	140,290	\$151,410
1998-1999	4	28,116	\$ 51,323
1999-2000	6	178,400	\$213,126
2000-2001	0	0	No funds available due to the sunset of the Tire Fee
2001-2002	8	115,200*	\$458,609
<b>Totals</b>	<b>26</b>	<b>460,906*</b>	<b>\$874,468</b>

\* The number of tires remediated is an estimate since the Board has not received all the final reports.

Since 1992, IWMB has provided more than \$1.4 million in grant funding to support local amnesty days and public education efforts. Ninety grants have been awarded to local government for amnesty programs and used tire abatement efforts. With these grants, local governments hold amnesty days for the public to drop off waste tires, clean up small illegal tire piles, establish tire collection networks, purchase tire collection vehicles and equipment, and develop public education materials on proper maintenance and disposal of automobile tires. The following table is a summary of the Amnesty Day grants.

**Table 4: Amnesty Day Grants**

<b>Fiscal Year</b>	<b>Number of Grants</b>	<b>Grant Award</b>
92-93	4	\$ 74,400
93-94	8	\$ 177,720
94-95	13	\$ 316,287
95-96	1	\$ 12,744
98-99	16	\$ 176,543
99-00	26	\$ 374,043
00-01*	0	No funds available due to the sunset of the Tire Fee
01-02	22	\$330,817
<b>Totals</b>	<b>90</b>	<b>\$1,462,554</b>

## ***Direction/Recommendations From the AB 117 Report***

Remediating existing tire piles is a challenge. During the AB 117 workshops, industry representatives considered remediation second only to enforcement in priority. The costs associated with remediation are considerable, and property owners and operators are many times reluctant to expend the money for major cleanup operations. The problem is compounded because many times the tire piles are located on economically undesirable land and cleanup costs exceed the value of the land itself, making land seizure a hollow threat. In other cases, the property owners are victims of unscrupulous operators (tenants) and do not have the necessary resources to pay for cleanup.

The legal process to bring about the cleanup of waste tires by property owners or to conduct an IWMB managed cleanup can take years and can be expensive. This process is initiated only after direct negotiations fail and IWMB has exhausted its administrative enforcement actions against the property owners. In addition, in some cases, IWMB must work with the Attorney General's Office to seek property access and conduct an IWMB-managed cleanup.

The AB 117 workgroup recommended that IWMB initiate an aggressive two-year cleanup program to eliminate all known major illegal waste tire piles (more than 5,000 tires in size). Completely eliminating the largest illegal piles will greatly reduce the major environmental dangers associated with waste tires and will provide a positive message to the public that progress is being made toward an overall solution. Both State and local efforts will be needed.

To prevent waste tire pile fires and deal with those that do occur, IWMB should continue to work with the Office of the State Fire Marshall (OSFM) to update the tire fire curriculum, work with appropriate State agencies to develop a tire fire protocol, and work with the Western Fire Chiefs Association to update and amend the Uniform Fire Code. IWMB should also take the lead in making certain the most current information is available on the nature of tire fires.

## ***Direction Provided by SB 876***

PRC Section 42889:

*"The moneys in the fund shall be expended for... the following purposes:*

*(e) To pay the costs of cleanup, abatement, removal, or other remedial action related to tire stockpiles throughout the state, including, all approved costs incurred by other public agencies involved in these activities by contract with the Board. Not less than six million five hundred thousand dollars (\$6,500,000) shall be expended by the board during each of the following fiscal years for this purpose: 2001-02 to 2006-07, inclusive.*

*(i) To pay the costs to create and maintain an emergency reserve, which shall not exceed one million dollars (\$1,000,000).*

*(j) To pay the costs of cleanup, abatement, or other remedial action related to the disposal of used whole tires in implementing and operating the Farm and Ranch Solid Waste Cleanup and Abatement Grant Program established pursuant to Chapter 2.5 (commencing with Section 48100) of Part 7."*

## ***IWMB's Strategic Plan and Objectives***

The Cleanup, Abatement, or Other Remedial Action Activities for storage of waste and used tires supports the cleanup, abatement, or remedial work required to prevent substantial pollution, nuisance, or injury to the public's health and safety at waste tire sites. These efforts typically require tire fire remediation efforts, removal of all waste tires and/or remediation of the site after removal of the tires. These efforts support:

**Goal 4**, which is to manage and mitigate the impacts of solid waste on public health and safety and the environment and promote integrated and consistent permitting, inspection, and enforcement efforts and achieve the following objective.

**Objective 4**, which is to intensify efforts to prevent illegal dumping and, where necessary, clean up illegally disposed waste and waste tire sites. This will be accomplished through the implementation of the following strategy.

**Strategy C**, which is to direct Board resources and support local efforts to ensure the timely remediation and restoration of illegal disposal sites and illegal waste tire sites that pose the greatest threat to public health and safety and the environment.

## ***The Plan***

### **Objectives**

1. To eliminate illegal stockpiles with more than 5000 tires by 2006.
2. To increase local government participation in the elimination of illegal stockpiles with fewer than 5000 tires.
3. To direct tires from cleanup to productive end use rather than landfill disposal to the extent costs are reasonable.

Greater detail on program activities is given below.

### **Program Activities**

Over the next five years, IWMB will fund the Waste Tire Stabilization and Abatement Program at \$8.425 million for the first year (FY 2003/04), \$ 7.825 million the second year, \$ 7.725 million for the third year, and \$ 5.775 million the fourth year and \$ 3.977 million the last year. The program will continue to conduct remediation of sites with IWMB-managed contractors and the awarding of grants to local governments for Amnesty Day events and cleanup of illegal piles. In addition, funding of \$333,000 will be provided to the Farm and Ranch Solid Waste Cleanup Grant Program. Further, an emergency reserve account will be established and maintained which shall not exceed \$1 million dollars, as directed by SB 876.

The costs for cleanup as estimated in this plan are generally higher than past cleanups. As identified in this element's objectives, IWMB plans to direct tires from cleanup to productive end uses rather than landfill disposal, which ultimately will be more costly. Sites yet to be remediated tend to be more remote and/or more complex than those sites that have been previously remediated. Currently, the remediation program staff consists of five and a half positions.

### **Proposed Funding**

FYs-03/04-07/08..... \$692,000 per FY

Waste Tire Stabilization and Abatement Program IWMB is currently funding both long-term and short-term remediation of illegal waste tire sites with IWMB-managed contracts. These

contracts are awarded for a two to three year period. Funds allocated to remediation efforts may roll over from one fiscal year to the next as encumbered into the contract. Information on short-term remediation projects is in Table 5.

**Table 5: Short-Term Remediation Projects by Fiscal Year**

<b>Fiscal Year</b>	<b>No. of Sites</b>	<b>Remediation Cost</b>	<b>Total No. of Tires Removed</b>
2001/2002	0	0	0
2002/2003	2	\$274,000	155,000
2003/2004*	7	\$1,884,900	715,000
2004/2005*	4	\$1,781,250	881,000
2005/2006*	8	\$1,568,905	141,500
2006/2007	tbd	tbd	tbd
2007/2008	tbd	tbd	tbd
<b>Total</b>	<b>21</b>	<b>\$5,509,055</b>	<b>1,892,500</b>

\* These numbers are estimated since the sites are constantly being added and deleted from the site remediation list.

This plan proposes to continue to move aggressively in the next two years on both long- and short-term projects and proposes to cleanup all sites currently listed within the next three years. However, there remains a significant backlog of uninvestigated sites that may ultimately require State-funded cleanup after enforcement efforts have failed. Although the program plans to move expeditiously through this backlog, these enforcement efforts will take time as staff researches property ownership, issues orders, and attains access in order to conduct cleanup. The program will prioritize these sites to ensure that the most significant sites are addressed first. It is hoped that cleanup will be completed on the sites in the backlog that require State-funded cleanup by the second fiscal year.

**Long-Term Remediation Projects:** IWMB has awarded three new contracts to carry out long-term remediation of the Westley and Tracy tire fire sites. Remediation of the Westley site was completed Fall 2002 and included the removal of over 290,000 tons of debris, contaminated soil, and partially burned tires, as well as extensive site restoration. The project allocated \$11 million over a five-year period. The remediation work was completed in less than two years for a cost of approximately \$17 million. The FY 01/02 allocation of \$6 million was expended and the remainder of the funds came from various settlement agreements with the responsible parties. The Board is still working in cooperation with the Office of the Attorney General to pursue cost recovery against several responsible parties. It anticipated that these efforts will continue at least until the end of 2003.

Two contracts have been awarded for the Tracy site. The first was for engineering and environmental services and the second was for site remediation. Because of the site conditions at the Tracy and the fact that the site burned for over two years before being suppressed, the potential for groundwater contamination is significant. Therefore, it is expected that ground water monitoring and implementation of mitigation measures may continue after the remediation of the site is completed. Fieldwork at Tracy is scheduled to begin spring 2003. This project is currently funded for \$9,000,000 over a four-year period. The engineering and environmental services contract has been fully funded at \$1,000,000 (FY 02/03) and the remediation contract is approved for an amount not to exceed \$8,000,000 over the next four years.

and is currently funded for \$3,000,000 FY 2002/03 funds. Based on our experience at Westley, it is anticipated that all the field remediation work could be completed at the Tracy site by the end of FY 03/04. Therefore it is proposed that the \$4,000,000 funding for long-term remediation be added to the Tracy remediation contract for FY 03/04. Remediation of groundwater is not included in the original \$9,000,000 estimate and may require additional funding if the Board chooses to fund such work.

As part of the long-term remediation of these sites, the Board has entered into Interagency Agreements to reimburse costs incurred by the Department of Toxics Substances Control and the Regional Waste Quality Control Board in overseeing the remedial actions at these sites.

#### **Proposed Funding**

FY 03/04.....\$4,000,000

FYs 04/05 and 05/06 .....\$2,700,000 per FY

FY 06/07.....\$1,000,000

Over the next four fiscal years, proposed funding for these projects will be \$10.4 million.

**Short-Term Remediation Projects:** A total of 23 sites have been identified for short-term remediation. Of these sites, 3 were cleaned up by the owners, 2 were cleaned as a Board managed remediation, 5 have been approved as a Board managed remediation and are awaiting site access, 7 are being evaluated for potential remedial options, and enforcement actions are still being pursued on the remaining 6 sites.

Since the approval of the initial five-year plan, 7 new sites have been added to the short-term remediation project list. Of these 7 sites, 4 were cleaned up by the owners, 1 has been approved as a Board managed remediation and is awaiting site access, and 2 are being evaluated for potential remedial options.

IWMB has existing contracts to carry out short-term state-funded remediation of illegal waste tire sites. New contracts were entered into for FY 2001/02. Additionally, funding was made available to address waste tire cleanup at Native American reservations and the Mexico/California border.

#### **Proposed Funding**

FY 03/04.....\$1,200,000

FYs 04/05 and 05/06.....\$1,500,000 per FY

FY 06/07.....\$1,000,000

FY 07/08.....\$352,000

Over the next five fiscal years, proposed funding for these projects will be \$5,552,000 million.

#### ***Local Government Waste Tire Cleanup Grant Program***

The program proposes to award FY 02/03 Local Government Cleanup Grants in May of 2003. The grant applications were due on March 15, 2003. Special consideration was given for applicants involved in Native American remediation sites, and remediation sites involving the Mexico/California border.

Since the Local Government Waste Tire Cleanup Grant program has been under-subscribed for the past several fiscal years, the criteria for the program has been revised to encourage greater participation. Some of revisions are as follows.

The grant review process was streamlined significantly. The review process will consist of a completeness review followed by a determination of applicant eligibility and a ranking of each project/site using the simplified priority ranking criteria. If the grant program receives more eligible applications than funds available, Board staff may recommend funding the higher priority sites or, for multiple site applications, partial funding of an applicant's request and only the highest priority projects/sites will be funded. In addition, if several sites are ranked in the lowest priority category, then the site with the most tires in that category will be recommended for funding.

In addition to local governments, California Tribal Organizations located in California are now eligible to apply. Local governments includes cities, counties, special districts, joint powers agencies, fire districts, etc. Cities or counties may now submit a regional application with authorization from other cities and/or counties.

**Proposed Funding**

FY 03/04.....\$800,000

FYs 04/05-07/08.....\$1,000,000 per FY

Over the next five fiscal years, proposed funding for these projects will be \$ 4.8million.

***Local Government Amnesty Day Grants***

The Public Education and Amnesty Day Grant Program is intended for local entities to develop education programs to provide information on proper waste tire disposal and proper tire care; and to allow the public to clean-up small waste tire piles through the proper disposal of unwanted tires. In FY 2001/02, 22 grants were awarded totaling \$330,817 and in FY 2002/03, 11 grants were awarded totaling \$321,247.

**Proposed Funding**

FY 03/04.....\$400,000

FYs 04/05 and 05/06 ..... \$500,000 per FY

FYs 06/07 and 07/08 ..... \$750,000 per FY

Over the next five fiscal years, proposed funding for these projects will be \$2.9 million.

***Emergency Reserve Account***

SB 876 legislation requires that IWMB create and maintain an emergency reserve account, which shall not exceed \$1 million. These funds will be used to respond to emergencies involving waste tires (e.g., tire fires).

**Proposed Funding**

FYs 03/04-07/08 .....\$1,000,000 per FY

This emergency reserve account is subject to change depending on the need or emergencies that arise. Legislation requires IWMB to maintain \$1,000,000 in this account. However, more than \$1,000,000 may be expended on a yearly basis. If allocated funds are not expended, funds will carry forward to the fund balance in the following fiscal year. A million dollar reserve must be maintained within expenditure authority for emergency purposes.

### ***Farm and Ranch Solid Waste Cleanup and Abatement Grant Program***

The purpose of the Farm and Ranch Solid Waste Cleanup and Abatement Grant Program is to remediate solid waste that has been disposed of illegally on farm and ranch property. SB 876 requires that funds be allocated to pay the costs of cleanup, abatement, or other remedial action related to the disposal of used whole tires in implementing and operating this program.

#### **Proposed Funding**

FYs03/04-07/08.....\$333,000 per FY

Over the next five fiscal years, proposed funding for these projects will be \$1.665 million.

### ***Fire Marshall Training***

IWMB should continue to work with OSFM to update the tire fire curriculum, work with appropriate State agencies to develop a tire fire protocol, and work with the Western Fire Chiefs Association to update and amend the Uniform Fire Code. IWMB should also take the lead in making certain the most current information is available on the nature of tire fires.

#### **Proposed Funding**

FY 04/05.....\$100,000

### ***Performance Measures***

To evaluate the program's success in achieving its objectives, the following measures are proposed (baseline data will be collected during FY 01/02):

1. Complete the long-term waste tire remediation projects within five years.
2. Complete the short-term waste tire remediation projects referred by IWMB's Waste Tire Enforcement Program and report status of projects to the Board on an annual basis.
3. Increase the number of waste tire cleanup grants issued to local governments on an annual basis.
4. Increase the number of waste tire amnesty grants issued to local governments on an annual basis.
5. Increase the percentage of tires remediated through the farm and ranch cleanup grants issued to local governments on an annual basis.
6. With the cooperation of OSFM, develop a tire fire response protocol and update and amend the Uniform Fire Code.
7. Track the Board's tire site remediation efforts to determine the percentage in low-income or minority neighborhoods.



## ***Proposed Five-Year Budget for Cleanup, Abatement and Remedial Action***

Table 6: Budget for Cleanup, Abatement, and Waste Tire Remediation

<b>Program Area</b>	<b>FY 03/04</b>	<b>FY 04/05</b>	<b>FY 05/06</b>	<b>FY 06/07</b>	<b>FY 07/08</b>
Remediation Staff	\$692,000	\$692,000	\$692,000	\$692,000	\$542,000
Long-Term Remediation Projects	\$4,000,000	\$2,700,000	\$2,700,000	\$1,000,000	\$0
Short-Term Remediation Projects	\$1,200,000	\$1,500,000	\$1,500,000	\$1,000,000	\$352,000
Local Government Waste Tire Cleanup Grant Program	\$800,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Local Government Amnesty Day Grants	\$400,000	\$500,000	\$500,000	\$750,000	\$750,000
Emergency Reserve Account	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Farm and Ranch Solid Waste Cleanup and Abatement Grant Program*	\$333,000	\$333,000	\$333,000	\$333,000	\$333,000
OSFM Training	\$0	\$100,000	\$0	\$0	\$0
<b>Totals</b>	<b>\$8,425,000</b>	<b>\$7,825,000</b>	<b>\$7,725,000</b>	<b>\$5,775,000</b>	<b>\$3,977,000</b>

\* Transfer to Farm and Ranch Solid Waste Cleanup and Abatement Grant Program

# Research Directed at Promoting and Developing Alternatives to the Landfill Disposal of Tires

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## ***State of the Program***

IWMB has promoted a variety of alternatives for the recycling of tires and has concluded that a mix of strategies is necessary to reduce tire disposal in landfills. To date, projects involving rubber-modified asphalt, civil engineering uses, energy recovery, molded rubber products, and projects that produce crumb rubber have been funded.

The IWMB has recently expended significant resources promoting the use of shredded tires in various civil engineering applications. Under two environmental services contracts with Dana Humphrey Consulting Engineering, IWMB has provided education on, and promoted the use of, tire shreds as an alternative to conventional lightweight fill materials in highway construction projects. These efforts have been focused primarily toward the California Department of Transportation (Caltrans), since it is the agency responsible for developing technical standards for highway construction. The efforts have included coordinating meetings with Caltrans design engineers, giving short courses on the use of shredded tires in highway construction, and providing both technical and environmental information to regulatory agencies responsible for the oversight of these projects.

As a result, Caltrans identified several potential highway projects in which shredded tires can be used as lightweight fill. One of these projects was the Dixon Landing/I-880 interchange project in which tire shreds were used as lightweight fill. This project was completed in August 2001. A second proposed project is a retaining wall that will utilize tires shreds as a lightweight fill material in Southern California. CIWMB, in coordination with Caltrans, will develop some conceptual designs and will conduct some preliminary field tests to validate these designs.

In another civil engineering application, the IWMB partnered with the Valley Transportation Authority (VTA) in San Jose to investigate the use of tire shreds as a vibration dampening material in their light rail system. The results of the investigation were very favorable and VTA used tire shreds in a section of their light rail section that was constructed in the Fall of 2002.

The IWMB continues to pursue other civil engineering applications for waste tires. IWMB has partnered with the University of California to investigate the seismic dampening properties of tire shreds in the design of bridge abutments. IWMB staff will also continue to conduct research into the environmental impacts from tire shreds fills to assist in the development of technical standards for civil engineering applications and tire shred monofills. This research would require actual monitoring of pilot and field studies to demonstrate and promote civil engineering applications of waste tires.

One potential barrier to using Rubberized Asphalt Concrete (RAC) is whether the RAC could be recycled and reused again in a future project. Therefore, Board staff is proposing to conduct a study to determine if recycled RAC performs as well as new RAC. The Board could partner with the University of California and Caltrans to identify potential recycled RAC formulations and then to test these formulations using laboratory and field simulations. The second phase would be to test the recycled RAC formulations in an actual highway construction project. This could be accomplished through a grant or contract with a local government public works department or Caltrans.

The combustion of tires for energy production and as a supplemental fuel has a proven history. In the past IWMB has supported this use by funding the analysis of emissions from facilities using tires as a fuel source. Pyrolysis and devulcanization represent technologies that have the ability to use large quantities of tires; however, their economic viability has not been proven. The first step in developing these potential markets is to evaluate the current state of the technology and the market. In February 2003, the Board approved a Scope of Work and requested to issue a "Request for Proposal" (RFP) to contract out for a study on Devulcanization Technology. After the evaluation is complete, IWMB will determine the next steps to move these technologies and markets forward.

Manufacturers using scrap tires to produce mats have indicated that, in general, markets are growing and that 15 to 20 percent of their production is related to IWMB grants. The goal is to retain the current level of usage and support research to develop additional uses. The potential for developing a significant end-use market for a multitude of molded rubber products, particularly new tires, does exist.

The Board approved the award of a contract to research possible recycling uses for fiber and steel that results from the manufacturing of crumb rubber. As of February 2003, the contractor CalRecovery Inc. has completed the literature review of research, legislation, and articles regarding markets for fiber and steel by-products from waste tires. The completion of the final report is due at the end of FY 2002/03

## ***Recommendations From the AB 117 Report***

**Tire Research:** This program will focus on developing new and promoting existing end-use applications for waste tires. Ultimately these end-use applications will provide alternatives to the landfill disposal of tires. The AB 117 Report recommendations for research are:

1. Forming a partnership with tire manufacturers to explore the development of techniques to use higher recycled content in the production of new tires (Recommendation #19).
2. Partner with industry segments to assist in examining environmental aspects at sites engaged in energy recovery from tires (Recommendation #20).

## ***Direction Provided by SB 876***

SB 876 includes the following intent language:

The purpose of this act is to do all of the following:

Encourage tire manufacturers to promote the use of the retreaded and longer-lasting tires, as well as develop recycled-content rubber tires.

PRC Section 42889:

*"Funding for the waste tire program shall be appropriated to the board in the annual Budget Act...for the following purposes:*

*(f) To make studies and conduct research directed at promoting and developing alternatives to the landfill disposal of tires."*

Further, PRC Section 42889(k) required OEHHA, in consultation with the State Air Resources Board, the Integrated Waste Management Board, and the State Department of Health Services, to prepare a report that includes the following: the major chemical constituents of smoke from burning tires; the toxicity of those

chemicals; and the potential effects on human health from exposure to smoke from tire fires. The report was completed in FY 2001/02 and submitted to the Governor and the Legislature as required.

## ***IWMB's Strategic Plan and Objectives***

The Research element has supported numerous research efforts for the recycling of tires that will ultimately result in reducing tire disposal in landfills. Some of these research efforts include projects involving rubber-modified asphalt, civil engineering uses, energy recovery, and molded rubber products. These research efforts support:

**Goal 2**, which is to assist in the creation and expansion of sustainable markets to support diversion efforts and ensure that diverted materials return to the economic mainstream and achieve

**Objective 2**, which is to encourage the use of materials diverted from California landfills and the use of environmentally preferable practices, products, and technologies. This will be accomplished by implementing:

**Strategy B** which is to provide financial incentives, including grants, contracts, loans, tax credits, etc. and,

**Strategy D**, which is to facilitate research and information transfer on new technologies and environmentally preferable product specifications.

## ***The Plan***

### **Objectives**

1. Support the development of new, or improvement of existing, markets for waste tires.
2. Establish an effective peer review system that objectively and independently evaluates research conducted.

Greater detail on program activities is given below.

### **Program Activities**

In the course of undertaking the following research activities, IWMB staff will make every attempt to utilize neutral third-party peer review resources when appropriate and available. The program will evaluate the creation of a Tire Research Center at one of California's universities to provide, among other things, this third-party peer review resource. If deemed necessary, funding will be provided as appropriate in subsequent fiscal years. Staff has also worked with staff from other state agencies to minimize duplication of effort, when appropriate. For example, SB 1170 (Sher, Statutes of 2001, Chapter 912) authorized the California Energy Commission (CEC) to investigate opportunities for increasing usage of low rolling resistance tires in California as a means to increase car fuel efficiency. Staff met CEC staff and attended several CEC workshops regarding the Fuel Efficient Tire Study. Staff provided input to the report prepared by the CEC and agreed to coordinate our tire studies with the CEC. The Fuel Efficient Tire Program Report was approved by the CEC on January 8, 2003 and submitted to the Governor's Office and the Legislature for approval.

Currently, three and a half positions support the IWMB's research efforts. In FY 06/07 and 07/08 one and three quarter positions will be shifted to the Market Development Section to manage the increased marketing activities.

**Proposed Funding**

FYs 03/04–05/06 .....\$ 457,000 per FY and FY's 06/07 and 07/08  
\$229,000 per FY

***Increase Recycled Content in New Tires***

This project, using higher recycled content in new tires, may be very difficult to accomplish because the only major tire manufacturer in the state (Pirelli) closed its Hanford facility; however, a smaller specialty tire manufacturer which is interested in increasing recycled content in its new tire production, has contacted IWMB staff. The Board approved the award of this contract at the April 16 & 17, 2002 Board Meeting for \$228,770. The contract was awarded to the Nevada Automotive Test Center (NATC). As of February 2003, NATC has completed the literature review of research, legislation, and articles regarding increasing the recycled-content in new tires. Competition of the final report on this contract is expected by the end of FY 2002/03. Findings and recommendations may be presented by a representative of NATC at the August Board Meeting.

In addition, the Waste Board heard testimony from tire manufacturers that new tires can contain up to 20% recycled content, although the actual amount can vary dramatically by tire model. The Board will work to identify the higher recycled-content product lines and explore ways to encourage government and non-government procurement of these recycled-content products.

**Proposed Funding**

FYs 04/05-07/08.....\$ 100,000 per FY

***Research Involving Energy Recovery***

The following projects/activities are proposed to address Recommendation #20 from the AB 117 Report:

1. **Update Report on Pyrolysis, Gasification and Liquefaction:** In July 1995, CalRecovery, Inc. produced a report entitled *Environmental Factors of Waste Tire Pyrolysis, Gasification, and Liquefaction*. The report presented the status of the technology, environmental impacts, resultant product market information, operating cost analysis, and recommendations.

Staff has received many inquiries seeking the IWMB's support of various pyrolysis-type conversion processes. An updated report would evaluate what has occurred with these technologies in the last five years, including advancements in techniques. Staff could use this information to evaluate whether these technologies are viable alternatives for waste tires and should receive additional research and development funding. The Board approved the scope of work in December 2002 and the contract is scheduled for approval in the spring of 2003. This contract will use the competitive bid process and maybe funded up to \$150,000 for FY 2002/03.

**Proposed Funding**

FYs 03/04 and 04/05\$300,000 per FY

2. **Energy Recovery From Tires:** This project would be similar to past IWMB support for energy recovery from tires and may include but not be limited to the following activities: emission and ash testing, fuel feed system development, fuel sizing analysis, capacity and production optimization and research into promising energy recovery technologies. Other activities will be accomplished through contracts or grants.

### **Proposed Funding**

FYs 03/04 and 04/05.....\$300,000 per FY

### **Other Technologies**

In addition to the AB 117 recommendations above, staff suggests the following areas for consideration of research activities:

1. **Civil Engineering Uses for Waste Tires:** This activity will continue IWMB's program of investigating new civil engineering uses for waste tires, and to also continue education of State, local and private sector engineers on the use of waste tires in civil engineering projects. This was accomplished by renewing the contract for engineering and environmental services and the construction oversight and incentives contract. The total amount of funding of these contracts was \$1,000,000 in FY 2002/03. For research projects focusing on specific civil engineering uses for waste tires, project specific contracts may be implemented. These projects could include, but are not limited to, erosion control, earthquake dampening, vibration mitigation, and sound walls.

Although we have made significant process promoting civil engineering applications, there is still much work that needs to be done in order to establish the use of waste tires as an accepted civil engineering application.

### **Proposed Funding**

FYs 03/04 and 04/05     \$500,000 per FY

2. **Increasing Tire Lifespan:** In FY 2002/03 the Board awarded a contract to Symplectic Engineering Corporation to research possible methods for increasing the lifespan of tires. The final draft of the IWMB's study *Investigation of Increasing the Lifespan of Tires* is due July 2003. The study will research the most effective way to increase the lifespan of tires. An extensive cost benefit analysis will accompany this report and should assist the CEC and IWMB focus their efforts in a mutually beneficial objective. The goals of the agreed upon objectives could be accomplished through a contract and/or interagency agreement.

The California Energy Commission (CEC) is conducting a study called the *California State Fuel-Efficient Tire Report: Volume 1* to determine the effect of low rolling resistance tires on vehicle fuel efficiency. The Board's contractor and staff are reviewing the findings from the CEC study. The possibility of developing a joint CEC and IWMB work group to explore the best way to accomplish both agencies goals is being discussed.

The Board will seek to encourage a convergence between the longer-lived tire goals and the higher energy efficiency goals while keeping tire safety paramount.

### **Proposed Funding**

FYs 03/04-07/08.....\$200,000 per FY

3. **RAC Study:** In FY 2002/03 the Board entered into an Interagency Agreement with a Caltrans Engineering Service Center to fund a test section of a highway, for side-by-side field tests including, but not limited to, the following processes: wet process, dry process, and terminal blend. It is anticipated that the construction completion report for this test section will be available in the spring

of 2005. The performance of this section will continue to be evaluated by Caltrans over the next 5 years.

**Proposed Funding**

FY 06/07.....\$200,000

4. **Updated Report: Tires as Fuel Supplement:** The Board issued the original report "Tires as a Fuel Supplement: Feasibility Study" in January 1992. The report investigated the feasibility of using waste tires as a fuel supplement for cement kilns, lumber operations, and other industrial processes. The report also investigated other uses for waste tires in the context of the technical, environmental, economic, geographical, regulatory and institutional factors affecting these uses. Since the initial investigation and issuance of the original report much has changed in the realm of waste tire management and remediation. The update of the original report will investigate the changes that have occurred and discuss current/future uses for waste tires in a contextual framework similar to the original report. The update may be done by staff or by contract.

**Proposed Funding**

FY 04/05.....\$100,000

5. **Fire Responder Health Effects:** This will be a follow up study to the one conducted by the Office of Environmental Health Hazard Assessment (OEHHA). This study was mandated by SB 876 and completed in June 2002, which identified and evaluated the health impacts from tire fires. In the follow-up study, OEHHA will focus their efforts on the first responders to tire fires. This might typically include: emergency response personnel such as emergency response contractors, fire fighters, law enforcement officers, and regulatory compliance staff. The report will assess the potential health impacts from exposure to tire fires to determine the appropriate level of personal protection necessary for the emergency responders to use when combating a tire fire.

**Proposed Funding**

FY 03/04.....\$200,000

FY 04/05.....\$250,000

6. **Water Quality and Tire Chips into Projects:** With new and innovative uses being developed for reuses of waste tires it is likely that questions will arise regarding water quality effects in specific situations. Water quality studies may be necessary for projects such as erosion control, lightweight fill, vibration attenuation etc. when whole tires, or shredded tires are using in applications in which the effects of runoff from the tire material on a potential sensitive receptor is unknown. The Regional Water Quality Control Boards (RWQCB) has the regulatory authority to require Waste Discharge Requirements (WDRs) when they believe water quality may be at risk. The RWQCBs will typically require documentation of the effects that waste tires may have on water quality when they are used in a civil engineering application that may impact ground or surface waters.

**Proposed Funding**

FY 05/06.....\$500,000

7. **Department of Health Services/ Mosquito and Vector Control Association of California Control and Research:** When water collects in waste tires, an excellent habitat is created for the immature, aquatic stages of the mosquito to develop. Based on preliminary surveillance data, several of California's 50 species of mosquitoes breed in tires and emerge to infest surrounding areas, bite people and animals, and potentially spread disease. Of immediate concern is the potential role of waste tires in the establishment and spread of West Nile virus (WNV) in California, and several other mosquito-borne viruses, such as St. Louis encephalitis and western equine encephalitis viruses. Tires can also play a role in the introduction, spread, and establishment of exotic mosquito species. In 2001, the Asian tiger mosquito, an important transmitter of human viruses in Asia, was introduced into California from China via used tire shipments.

To minimize this threat, research, surveillance and treatment activities need to be conducted by the California Department of Health Services (DHS), in collaboration with the Mosquito and Vector Control Association of California (MVCAC) and local agencies. Funding will be provided in FY 05/06 through 07/08 for this activity.

**Proposed Funding**

FYs 05/06-07/08.....\$350,000 per FY

8. **Third Party Peer Review:** Staff will attempt to utilize neutral third-party peer review resources when appropriate and available. Possible reviewers from other State Agencies, universities, and the tire industry could be used for the third-party peer review.

**Proposed Funding**

FYs 03/04-07/08.....\$75,000 per FY

9. **Department of Transportation Support:** This project will provide funding to Caltrans for research contracts examining the recyclability of rubberized asphalt concrete (RAC); comparing different blends of RAC (wet, dry, and terminal blends); developing and updating materials and construction specifications and rehabilitation guidelines; and providing training and education on design, construction, and maintenance of RAC pavements.

**Proposed Funding**

FY 03/04.....\$1,100,000

FY 04/05.....\$600,000

## ***Performance Measures***

To evaluate the program's success in achieving its objectives, the following measures are proposed (baseline data will be collected during FY 01/02):

1. Through work on procurement and through direct work with tire manufactures, seek to increase the amount of recycled content in new tires.



2. Determine the viability of pyrolysis-type conversion processes.
3. Determine the viability of energy recovery from waste tires, and establish optimum operational parameters.
4. Determine the viability of devulcanization.
5. Increase the number of projects awarded to promote civil engineering applications of waste tires.
6. Investigate and evaluate potential methods within three years that could increase the life span of tires.
7. Investigate and identify potential methods to recycle and reuse byproducts created from the processing of crumb rubber.
8. Increase the percentage of RAC used in highway projects in California over the next five years.
9. Assure that third-party peer review is conducted on all research activities.
10. Before the next biennial update of the 5-year plan, conduct a performance review of research efforts to determine whether adjustments should be made to enhance project selection and dissemination of results.

***Proposed Five-Year Budget for Research Directed at Promoting and Developing Alternatives to the Landfill Disposal of Tires***

**Table 7: Research Budget**

<b>Program Area</b>	<b>FY 03/04</b>	<b>FY 04/05</b>	<b>FY 05/06</b>	<b>FY 06/07</b>	<b>FY 07/08</b>
Research Staff	\$457,000	\$457,000	\$457,000	\$229,000	\$229,000
Increased Recycled Content in New Tires		\$100,000	\$100,000	\$100,000	\$100,000
Pyrolysis, Gasification, and Liquefaction	\$300,000	\$300,000			
Energy Recovery from Tires	\$300,000	\$300,000			
Civil Engineering Uses for Tires	\$500,000	\$500,000			
Increased Tire Lifespan	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
RAC Study				\$200,000	
Updated Report: Tires as Fuel Supplement		\$100,000			
Fire Responder Health Effects	\$200,000	\$250,000			
Water Quality & Tire Chips into Projects			\$500,000		
DHS/MVCAC Mosquito Control and Research			\$350,000	\$350,000	\$350,000
Third Party Peer Review	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Caltrans Support	\$1,100,000	\$600,000			
<b>Totals</b>	<b>\$3,132,000</b>	<b>\$2,882,000</b>	<b>\$1,682,000</b>	<b>\$1,154,000</b>	<b>\$954,000</b>

# Market Development and New Technology Activities for Waste and Used Tires

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## ***State of the Program***

The IWMB report entitled *Waste Tire Management Program: 2001 Staff Report* shows a diversion rate of 74.8 percent; the diversion rate in 1990 was only 34 percent. In 2001, of the estimated 33.3 million reusable and waste tires generated in California, an estimated 24.9 million California tires and 1.7 million imported waste tires (from other states) were diverted from landfill disposal, as follows: 1.5 million were reused; 2.4 million were retreaded; 14.9 million were used for various shredded, crumb rubber, cut or stamped applications (including rubberized asphalt concrete (RAC), playground cover and other surfacing, civil engineering, alternative daily cover (ADC), railroad crossing levelers, and other molded products); 2.6 million were exported; and 5.2 million tires were combusted as fuel (1 million were combusted for energy production, the cement manufacturing industry consumed 4.2million waste tires).

In the early years of the Waste Tire Program (FYs 92/93–94/95), IWMB put more emphasis on business development and innovative research grants. From FY 95/96 to the present, IWMB emphasized grants to local governments as well as Interagency Agreements and contracts to promote waste tire recycling and market development.

During FY 98/99, IWMB expended significant resources promoting the use of shredded tires in various civil engineering applications. Under two environmental service contracts, IWMB has provided education on, and promoted the use of, tire shreds as an alternative to conventional lightweight fill materials. Information in Table 7 provides is an indicator of potential market development uses in the following areas: use of waste tire chips in highway engineering projects, levee reinforcement projects, and leach field projects

The tire chip projects described in Table 7 have the potential to reuse millions of tires when replicated in other projects throughout California. The methodology utilized in the levee reinforcement project (which was completed in 1999) has the potential to reuse a large quantity of waste tires and was tested in the levee of an irrigation canal adjacent to the Feather River. Tires used in the project came from IWMB remediation projects in Oroville. The levee will continue to be monitored under carefully controlled water flow and pressure conditions.

The purpose of the research and demonstration septic tank leach field project (Interagency Agreement with Caltrans) is to demonstrate the beneficial reuse of waste tires in septic tank leach field construction, instead of using aggregate as the drainage and filter media. The monitoring phase of this project is ongoing, using an Interagency Agreement with the Department of Toxic Substances Control (DTSC) to provide the analytical services.

Using waste tire shreds as lightweight fill in highway projects is a common practice and has been the technology employed in numerous highway projects on the east coast. The purpose of the Dixon Landing Project is to introduce the technology to Caltrans in an actual highway application, and to demonstrate that the material's properties allow it to replace conventional lightweight fill material, and be used at a substantially reduced cost. At the same time, the technology provides a beneficial reuse of waste tires. For this project, which was completed in August 2001, IWMB supplied the shredded tire material. A second proposed project in Southern California is a retaining wall that will utilize tire shreds as a lightweight fill material.

**Table7: Waste Tire Civil Engineering Projects**

Year	Item	Funding	Number of Tires Used
1997	Levee reinforcement project	\$660,000	45,000
1998	Research of tire shreds in septic leach fields	\$169,400	20,000
2001	Lightweight fill for the Dixon Landing Interchange	\$450,000	600,000
2003	Lightweight fill for the Route 91 Retaining Wall	TBD	TBD
<b>Totals</b>		<b>\$1,279,400</b>	<b>665,000</b>

Another potential market is molded rubber products. It is not projected to consume large numbers of waste tires; however, the potential for developing end-use products does exist and should be nurtured. Manufacturers using scrap tires to produce mats have indicated that, in general, markets are growing and that 15 to 20 percent of their production is related to IWMB grants. Molded rubber products may be used in the existing market development contracts and grant programs, such as the Local Public Agency Playground Cover and Track Other Recreational Surfacing Grant Program; the Waste Tire Sustainable Building Contracts; and the Tire Product Commercialization and Applied Technologies Grant Program. Since projects frequently fund more than just the purchase of the waste tire products, the funding for grants, contracts, and Interagency Agreements for market development for waste tires in California is not directly correlated with the number of waste tires used per project. For example, the playground and track and other recreational surfacing grants may pay for site preparation as well as the purchase and installation of waste tire products.

RAC grants, contracts, and Interagency Agreements can fund equipment, which in the long run will lead to greater use of RAC in California. However, the funding for these purchases cannot be directly correlated with the number of waste tires used. Some of the funding was used to purchase equipment for research and testing of RAC pavement projects.

Similarly, business development grants of the waste tire program went to companies to write business plans or to purchase a piece of equipment that will benefit the use of waste tires; however, the impact cannot be directly calculated in terms of number of waste tires used.

### **Barriers to Market Development: Low Tipping Fees and End-Use Incentives**

Waste tires “flow” to the lowest cost, be it for disposal, stockpiling, generating energy, or manufacturing products made from waste tires. Businesses that produce waste tire products find it difficult to compete with low tire disposal costs, such as the \$.42-per-tire charged in southern California (tipping fees charged at landfills in northern California are higher, overall, than those in southern California). Further, SB 876 stakeholders (California businesses) have expressed concern over unfair competition from businesses receiving subsidies on waste tires coming from other states or countries.

## ***Recommendations From the AB 117 Report***

The following recommendations in the AB 117 Report involve market development:

1. Technology transfer and grants to local governments for civil engineering projects (Recommendation #12).

2. Develop rubberized asphalt concrete (RAC) guidelines with Caltrans (Recommendation #14).
3. Grants for molded rubber products (Recommendation #15).
4. Expand on Scrap Tire Management Council (STMC) product catalog (Recommendation #16).
5. Procurement of tire-derived products by the State Department of General Services (DGS) (Recommendation #17).
6. Procurement of retreads by DGS (Recommendation #18).
7. Public education/information program on tire care, disposal, high mileage tires (Recommendation #19).
8. A universal end-use incentive program should not be established; IWMB should have the option of providing specific incentives to individual projects (Recommendation #21).

As indicated in the AB 117 Report, IWMB decided to focus on market development activities, not use of subsidies. If an end-use incentive or subsidy program were developed, all segments of the market would have to be supported, making the program very expensive to implement. Such incentives foster the creation of marginal businesses that compete with and threaten the viability of established businesses. Further, end-use incentive programs created in other states have not provided sustainable markets for used tires and, to the contrary, have actually damaged the existing permanent market development infrastructure. Although not recommended by the AB 117 Report, due to stakeholder input at public meetings and IWMB Board meetings, an Interagency Agreement for \$80,000 was entered into with Robert W. Wassmer, Professor, Public Policy and Administration at California State University, Sacramento (CSUS) to develop the report *An Analysis of Subsidies and Other Options to Expand the Product End Use of Scrap Tires in California*. An August 15, 2002 workshop was held to discuss recommendations in the report. The Board at the November Committee Meeting accepted the report by CSUS as completion of the contract obligation.

### ***Direction Provided by SB 876***

PRC Section 42889:

*“Funding for the waste tire program shall be appropriated to the board in the annual Budget Act...for the following purposes:*

*(g) To assist in developing markets and new technologies for used tires and waste tires. The board's expenditure of funds for purposes of this subdivision shall reflect the priorities for waste management practices specified in subdivision (a) of PRC Section 40051.”*

### ***IWMB's Strategic Plan Goals and Objectives***

The Market Development and New Technology Activities for Waste and Used Tires supports Goal 2 and Goal 6 of the Boards Strategic Plan as follows:

**Goal 2:** Assist in the creation and expansion of sustainable markets to support diversion efforts and ensure that diverted materials return to the economic mainstream.

**Objective 2:** Encourage the use of materials diverted from California landfills and the use of environmentally preferable practices, products, and technologies.

**Strategy D:** Require recipients of grants, contracts, loans, and other financial incentives to meet Board criteria such as purchasing environmentally preferable products, constructing sustainable buildings, and practicing sustainable landscaping. *The Board requires that each grant application contains criterion that gives preference to the applicant that purchases recycled-content products, recycled or reused products, or engage in other waste reduction activities.*

**Objective 2: (See above)**

**Strategy B:** Provide financial incentives, including grants, contracts, loans, tax credits, etc. The Waste Tire Track and Other Recreational Surfacing Grant Program is directly related in its entirety to this goal, objective, and strategy.

**Goal 6:** Continuously integrate environmental justice concerns into all of the Board's programs and activities, including administrative and budgetary decisions.

**Objective 3:** Ensure greater public and community participation, including low-income and minority populations, in the development, adoption, and implementation of environmental regulations, policies, and programs.

**Strategy B:** Seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation. *The Board requires that each grant application contain criterion to give preference to projects in low income and/or underserved communities.*

## **The Plan**

### **Objectives**

1. Increase public awareness on the proper use and maintenance of tires and of reuse techniques for used or waste tires.
2. Increase the diversion of waste tires to 80 percent by the year 2006..
3. Increase use of waste tires in energy recovery applications.

Greater detail on program activities is given below.

### **Program Activities**

The following activities are proposed to meet the market development requirements for the tire program. The existing four staff positions and one supervisor will continue to conduct the program and one and a quarter additional positions will be shifted from the Research Section in FY 06/07 and 07/08 to manage the increased marketing activities. The activities are categorized according to the hierarchy of PRC Section 40051(a).

### **Proposed Funding**

FYs 03/04-05/06.....\$524,000 per FY  
FYs 06/07 and 07/08..... \$753,000 per FY

### **Tire Recycling Conferences**

IWMB should continue to hold the Tire Recycling Conferences on a biennial basis. Tire conferences provide attendees with up-to-date information on IWMB's waste tire management processes. They provide a forum to discuss all aspects of waste tire

management, including hauling, manifests, cleanup, proper disposal, recycling technologies, and research and market development activities. The conferences offer a venue for Board Members, staff, and stakeholders to meet and focus on issues of common concern. Past conferences held in 1993 (Los Angeles), 1995 (Sacramento), 1998 (Santa Clara), 2001 (Palm Springs) were well attended, with between 100–200 people attending each one. The next conference is scheduled to be in September 2003 in Sacramento.

#### **Proposed Funding**

FYs 03/04 and 05/06 .....\$100,000 per FY  
 FY 07/08.....\$125,000

#### **Source Reduction**

By advertising to the public via brochures and Public Service Announcements (PSA), IWMB will educate the public on the benefits of purchasing higher-mileage tires and how to properly care for tires. Further, IWMB can encourage the use of retread purchases for the State’s fleet services through the Department of General Services (DGS).

1. **Tire Care Brochure or Utility Bill Insert:** Most tire companies are already making efforts to produce longer-lasting, higher-mileage tires. The best way to reduce the number of tires entering the waste stream each year is to educate the public on the benefits of purchasing higher-mileage tires and how to properly care for tires. Proper tire care maximizes the lifespan of the tire.

Funding was provided for a contract to develop baseline data through a survey regarding public awareness of tire care, waste tire products, and proper disposal of tires, as well as other waste tire issues. The Board approved the award of this contract at the March 12-13, 2002 Board Meeting to Chico State University in the amount of \$250,000. As of February 2003, the contractor had completed the literature review. Completion of the contract is expected in April 2003. The survey maybe conducted again in FY 05/06. If conducted, the survey will measure the effectiveness of the brochure and the public service announcements (PSA) described in the next section.

#### **Proposed Funding:**

FY 06/07.....\$250,000

2. **Public Service Announcements:** As a follow-up to the brochure/survey, staff proposes the use of PSAs as a reminder on how to properly care for tires. This activity would be accomplished through a contract. Staff will develop a brochure utility bill insert, radio/television PSA, or other outreach tools based on the outcome of the survey described above.

#### **Proposed Funding**

FYs 03/04–07/08 .....\$250,000 per FY

3. **Retreaded Tires:** Retreading is a viable option for “renewing” tires by applying new tread to used tire carcasses (casings) after the amount of tread that is legally required to be on the tire has worn off. IWMB can support this use by encouraging DGS to purchase retreaded tires for the state fleet cars and trucks. This activity can be accomplished through a Memorandum of Understanding (MOU) between IWMB and DGS. A pilot or trial program to purchase retreads could be another way to encourage DGS to use retreads.

### **Proposed Funding**

No funding is needed for this activity.

### **Recycling Programs**

As recommended by the AB 117 Report and in SB 876, IWMB's Five-Year Plan shall assist in developing markets and new technologies for used tires and waste tires. The following grant programs and contracts include projects and programs aimed at increasing the markets for used and waste tires and encouraging the development of new technologies.

1. **Civil Engineering Uses :** AB 117 Report Recommendation #12 proposes that IWMB encourage State and local governments to use waste tire products in civil engineering applications. Civil engineering uses have the potential to use a large number of waste tires. These uses include, but are not limited to, highway projects, lightweight fill, septic system drain fields, erosion control, and vibration mitigation in light rail systems. A measure of the success of this program would be to increase usage over a five-year period up to four million tires per year. This could be achieved through partnerships with both State and Local Government through either contract or grants geared toward the use of tire shreds or bales in civil engineering projects.

### **Proposed Funding**

FYs 04/05.....\$500,000

FYs 05/06-07/08.....\$1,000,000 per FY

2. **Playground Cover:** The local government playground cover grants are a continuation of the existing IWMB program started in FY 96/97. The grants help develop markets for crumb rubber and have proven helpful to local government agencies, school districts, special districts, and Indian Tribes in meeting State and federal playground safety and accessibility requirements. Jurisdictions that have not received these grants in the past will receive preference. During FY 2001/02 the Board awarded funds to 26 applicants totaling \$565,648; in FY 2002/03 the Board awarded funds to 31 applications totaling \$752,791.

### **Proposed Funding**

FYs 03/04-07/08.....\$800,000 per FY

3. **Track and Other Recreational Surfacing:** Grants for track and other recreational surfacing were previously offered under the Playground Cover and Track Surfacing Grant Program. This grant program is being separated to allow for larger grant awards and targeting of these grants to school districts and local government agencies and Indian Tribes. These grants will help develop markets for crumb rubber and have proven helpful to schools and local government agencies in providing running track facilities. Jurisdictions that have not received these grants in the past will receive preference. During FY 2001/02 the Board awarded funds to 26 applicants totaling \$1,949,288. In FY 2002/03 the Board awarded funds to 11 applications totaling \$1,000,000. Funding above the original \$1,000,000 appropriation for FY 2001/02 was provided out of a reallocation item approved by the Board. Additionally, in FY 02/03 \$948,545 for 11 passing applicants is recommended if additional funding becomes available prior to the end of each fiscal year.

### **Proposed Funding**

FYs 03/04-05/06.....\$800,000 per FY

FYs 06/07 and 07/08.....\$1,000,000 per FY



4. **Product Commercialization:** The product commercialization grants will target businesses that need assistance to establish or expand their products to a commercial scale. These grants will be aimed primarily toward developing molded rubber products, per Recommendation #15 of the AB 117 Report. During FY 2001/02 the Board awarded funds to nine applicants totaling \$2,179,389. In FY 2002/03 the Board awarded funds for 8 applicants totaling \$2,000,000, Funding above the original appropriation for FY 2001/02 was provided out of a reallocation item approved by the Board. Additionally, in FY 02/03 \$1,250,000 for five passing applicants is recommended if additional funding becomes available prior to the end of the fiscal year.

**Proposed Funding**

FYs 03/04- and 04/05.....\$1,600,000 per FY  
FYs 05/06 and 06/07 .....\$ \$1,500,000 per FY  
FY 07/08.....\$1,100,000

5. **Sustainable Building:** The green building grants/contracts will be for the purchase of building products containing recycled rubber from California waste tires. The grants will be provided through the IWMB's existing Sustainable Building Program and administered by the Waste Prevention and Market Development Division (WPMD). In FY 2001/02 the Board awarded \$369,888 to five contractors and from reallocated funding an additional two grants were awarded for \$275,000. In FY 2002/03 the Board awarded \$400,000 to three contractors and directed funds to be provided to the Santa Ana Unified School District for the Lorin Grisette High Performance Demonstration School. The school will use these funds to incorporate RAC on the playground surface and fire access road, and pour in place for underneath the play structure.

**Proposed Funding**

FYs 03/04-04/05 .....\$300,000 per FY  
FYs 05/06-07/08.....\$400,000 per FY

6. **Rubberized Asphalt Activities:** IWMB has supported testing and demonstration projects, awarded grants for local government application of RAC, conducted workshops and conferences to inform potential users, and funded a statewide technology center to provide technical assistance in the use of RAC. A measure of success of these activities is to increase usage over a five-year period to five million waste tires per year.

In addition, IWMB and industry staff will continue to work with Caltrans' staff (the rubber pavement team) to resolve issues relating to the technical aspects of using RAC. Further, staff will pursue a specification preference in Caltrans' bidding process for using RAC made from California-produced crumb rubber.

- a. **Rubberized Asphalt Concrete Technology Center (RACTC)** - \$500,000 of proposed funding for the RACTCs has been identified for FY 2003/04 and 2004/05. However, staff is in the process of selecting a contractor to evaluate the processes and outcomes of the RACTCs. Pending the recommendations of the evaluation of the RACTCs the two centers will continue their respective programs of technology transfer to local governments through direct consultation, conducting local and regional workshops, and providing

informational materials, and an Internet Web site. This project would continue to be accomplished through contracts (standard agreements) with Sacramento County for the northern center and Los Angeles County for the southern center.

**Proposed Funding**

FYs 03/04..... \$250,000 per RACTC (\$500,000 total)  
 FYs 04/05-07/08.....\$300,000 per RACTC (\$600,000 total per FY)

7. **Recycling Market Development Zone (RMDZ) Loans:** The support of the RMDZ Loan Program will allow direct loan assistance for waste tire related businesses. Both RMDZ and tire staff have received numerous inquiries regarding tire businesses wishing to relocate to an RMDZ to take advantage of the loan program. Providing support to the loan program will ensure that funds are available to assist businesses that qualify for the program. Further, the RMDZ Loan Program should include an additional criterion evaluated by Waste Tire Management Program staff on the likelihood of success of the project. In FY 2001/02 three loans were approved by the Board to waste tire related businesses totaling \$2,318,750. Funding above the original appropriation for FY 2001/02 was provided out of a reallocation item approved by the Board. In FY 2002/03, two loans were approved by the Board to waste tire related businesses totaling \$1,745,000.

**Proposed Funding**

FYs 03/04 and 04/05 .....\$1,600,000 per FY  
 FYs 05/06-07/08.....\$2,000,000 per FY

8. **State Agency Purchases and Development:** Interagency agreements would be developed to help state agencies purchase or develop products made from waste tire rubber. Any rubber product purchased or manufactured must be made with 100 percent California waste tire rubber. In FY 2001/02 the Board awarded \$280,000 to the Department of Parks and Recreation for a RAC project (\$80,000 awarded from reallocated funds). For FY 2002/03 the Board Awarded \$200,000 to the Department of Parks and Recreation for a RAC project.

**Proposed Funding**

FY 03/04..... \$300,000  
 FY 04/05.....\$325,000  
 FYs 05/06-07/08.....\$400,000 per FY

9. **Support of Other IWMB Programs:** This plan will provide funding to support various IWMB programs that encompass multi-material projects: the Recycled Product Tradeshow, the California Materials Exchange (CalMAX), and the Waste Reductions Awards Program (WRAP).

**Proposed Funding**

***Recycled Product Tradeshow***

FY 03/04.....\$80,000  
 FY 04/05.....\$100,000  
 FYs 05/06-07/08.....\$75,000 per FY

***CalMAX and WRAP***

FY 03/04.....\$20,000 per program, (\$40,000 total)  
 FYs 05/06-07/08.....\$16,500 per program, per FY (\$33,000 total per FY).

10. **Tires Database:** A comprehensive Tire Database needs to be created to effectively capture the vast amount of data generated from the intensified tire management practices mandated by SB 876. A properly designed Tire Database will enable staff to provide decision makers with accurate and statically sound reports on all the applicable tire related issues. With solid information readily accessible, the decision makers can easily evaluate the tire data and adjust the program as needed to insure the desired results are achieved.

**Proposed Funding**

FY 03/04.....\$100,000  
FY 04/05.....\$150,000

11. **Buy Recycled Audits:** An interagency agreement could be developed with a state agency with auditing experience. The audit would focus on the purchase of tires and tire derived products by State agencies. Tire related purchases listed on the State Agency Buy Recycled Campaign (SABRC) reports would be audited for accuracy.

**Proposed Funding**

FYs 03/04-07/08.....\$50,000 per FY

12. **Fiber and Steel Uses:** This funding supports processing of the fiber and steel reclaimed from recycled tires. Staff would accomplish this task through a grant or contract. The steel would be prepared for resale and reuse by removing any rubber left on the steel. The grantee/contractor would be responsible for finding a need for the steel retrieved from the waste tire rubber manufacturers. The same scenario would be accomplished with the fiber from waste tires when the waste tire steel market is established. Any steel purchased must be from 100% California waste tires.

**Proposed Funding**

FY 05/06.....\$400,000

13. **Kuehl RAC Grant Program:** SB 1346 (Kuehl, Statute of 2002) directs the Board to offer grants to local governments for use of rubberized asphalt concrete. The bill set a subsidy of \$2.50 per ton of asphalt using a minimum of 20 pounds of crumb per ton of asphalt. Eligible projects range in size from 2,500 to 20,000 tons for grant awards equal to \$6,250 to \$50,000. (In comparison, conventional asphalt runs around \$40 per ton, RAC ranges from \$35 to \$90 per ton.) The first grant cycle is anticipated to be awarded by January 2004.

**Proposed Funding**

FY 03/04.....\$1,100,000  
FY 04/05.....\$1,200,000  
FY 05/06.....\$1,429,000

## **Performance Measures**

The performance measures for market development directly relate to the objectives stated in this section under "The Plan." Baseline data will be collected during FY 01/02 for all quantitative measures using the annual waste tire survey, grant and contract results, and end-

uses reported in the enhanced manifest system. The performance measures below are presented in order of IWMB's hierarchy of waste management (source reduction; recycling and reuse; environmentally safe transformation; and lastly, landfill disposal).

1. Percent of increase in public awareness of proper care and purchase of tires, use of products made from recycled waste tires or purchase of retreaded tires, and proper disposal of waste tires. These educational attributes will be measured by contracting with an organization to conduct a survey every few years of California residents and comparing the results with baseline data obtained from the survey conducted during FY 01/02.

Increase public awareness of proper care and purchase of tires, use and products made from recycled waste tires or purchase of retreaded tires, and proper disposal of waste tires. Establish a baseline for public knowledge of these areas. Update and continue implementation of a marketing plan to reach the public on these issues.

2. Increase public and private sector awareness of the availability of recycled content and longer-lived tires and implement a program to encourage their purchase and use. Work with the California Energy Commission involved in seeking lower rolling resistance tires to assure that longer lived and recycled content tires are simultaneously encourages while keeping tire safety paramount.
3. Percent of increase in the level of recycling as described in the "Objectives" section, as measured from the survey and data from the enhanced manifest system.
4. Percent of increase of grant funds appropriated that are used by the end of the grant term, obtained by conducting an analysis of the grant program after all grants are closed.
5. Percent of increase in use of waste tire products by public agencies and Indian tribes, including RAC, measured by analyzing annual reporting requirements and grant/contract final reports to IWMB. Quantify the estimated use of recycled tire products by public agencies and Indian Tribes and work to achieve an annual increase of at least 5 percent.

Achieve a 5 percent annual reduction in the number of waste tires disposed in landfills annually, based on data collected for the annual report and from the enhanced manifest system.

6. Level of satisfaction with grant/contract management based on staff surveys conducted when the grants/contracts close.
7. Improve grant administration by streamlining the grant administration process by identifying time-consuming and/or unnecessary steps.
8. Begin a program to implement SB1346 (Kuehl Bill). Educate potential recipients on the availability of the program and seek to distribute a minimum of 22 grants in 03-04 and at least 24 grants starting in 04-05 and beyond.
9. Review and follow up on RAC Center Program evaluation. Establish a more visible and publicized web-based presence for the services of the RAC centers and related use of RAC.
10. Work with California Department of Transportation to ensure the effective implementation of SB 1346 (Kuehl).

11. In the next two years, increase the advertisement of tire products listed in the CalMax publication by conducting additional outreach.
12. In the next two years, increase by 10 percent the number of successful applicants receiving WRAP awards from waste tire companies.
13. Increase by 10 percent each year the number and variety of vendors that display waste tire products at the Recycled Product Tradeshow.
14. During the next five years, increase the use of waste tire products in green buildings that are purchased and installed without CIWMB funding.
15. During the next three years, increase the amount of successful waste tire businesses that receive RMDZ loans.
16. Each year increase by 10 percent the amount of tire-derived products purchased by public agencies.
17. The Board shall continue to participate in the Cal EPA environmental indicators program to track waste tire disposal and diversion Staff will report on the success and challenges facing the waste tire industry in the market place including the challenges of competition from importing tire crumb, costs of energy, etc.

***Proposed Five-Year Budget for Market Development and New Technology Activities for Waste and Used Tires***

**Table 8: Budget for Market Development and New Technology Activities**

<b>Program Area</b>	<b>FY 03/04</b>	<b>FY 04/05</b>	<b>FY 05/06</b>	<b>FY 06/07</b>	<b>FY 07/08</b>
Market Development Staff	\$524,000	\$524,000	\$524,000	\$753,000	\$753,000
Tire Recycling Conference	\$100,000	\$0	\$100,000	\$0	\$125,000
Tire Care Brochure/Survey	\$0	\$0	\$0	\$250,000	\$0
Public Service Announcement	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Civil Engineering Uses	\$0	\$500,000	\$1,000,000	\$1,000,000	\$1,000,000
Playground Cover Grant	\$800,000	\$800,000	\$800,000	\$800,000	\$800,000
Track/Other Recreational Surfaces	\$800,000	\$800,000	\$800,000	\$1,000,000	\$1,000,000
Product Commercialization Grants	\$1,600,000	\$1,600,000	\$1,500,000	\$1,500,000	\$1,100,000
Sustainable Building	\$300,000	\$300,000	\$400,000	\$400,000	\$400,000
RACTC	\$500,000	\$600,000	\$600,000	\$600,000	\$600,000
RMDZ Loan	\$1,600,000	\$1,600,000	\$2,000,000	\$2,000,000	\$2,000,000
State Agency Purchases and Development	\$300,000	\$325,000	\$400,000	\$400,000	\$400,000
Recycled Product Tradeshow	\$80,000	\$100,000	\$75,000	\$75,000	\$75,000
CalMAX and WRAP	\$40,000	\$33,000	\$33,000	\$33,000	\$33,000
Tires Database	\$100,000	\$150,000	\$0	\$0	\$0
Buy Recycled Certification Audits	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Fiber and Steel Uses	\$0	\$0	\$400,000	\$0	\$0
RAC Grants	\$1,100,000	\$1,200,000	\$1,429,000	\$0	\$0
<b>Totals</b>	<b>\$8,144,000</b>	<b>\$8,832,000</b>	<b>\$10,361,000</b>	<b>\$9,111,000</b>	<b>\$8,565,000</b>

# The Waste and Used Tire Hauler Program and Manifest System

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## ***State of the Program***

Beginning January 1, 2001, SB 876 legislation required every person who transports 10 or more waste tires to hold a valid tire hauler registration and use state-issued decals and manifests. Prior to obtaining registration, a prospective hauler must post a \$10,000 bond. Registered tire haulers must register annually with IWMB, possess manifests during the transport of waste or used tires, transport only to legally authorized end-use facilities, and return the completed manifest to the generator of the waste tires, if so requested. State law requires that persons receiving tires from unregistered haulers report the unregistered hauler to IWMB by providing the name, address, phone number, and license plate number of the unregistered hauler. The hauler program consists of two separate components: registration and manifesting, and enforcement. Enforcement efforts against haulers during FY 2001/02 resulted in the imposition of \$13,700 in fines; of that amount \$7,175 has been collected.

In a typical year, IWMB registers more than 800 California waste and used tire haulers and 7,000 vehicles. Registrations expire at the end of each calendar year. IWMB sends renewal packages to registered haulers so they can renew their registrations in a timely manner. Those haulers who do not renew by the end of the calendar year are cancelled. IWMB distributes manifests at no charge to registered haulers upon request. Approximately 150,000 manifests are distributed per year.

Current law allows exemptions from waste tire registration under certain conditions:

- Hauling nine or fewer tires.
- The person hauling is in a government vehicle and employed by either local, State, or federal government and is not hauling tires for hire.
- Hauling tires through the state without loading or unloading tires.
- Hauling tires for agricultural purposes (defined).
- A common carrier hauling tires on a back-haul.
- The tires are inadvertently commingled with solid waste and it is not economically feasible or safe to remove the tires.
- The individual receives a letter by the LEA for a one-time haul to the landfills or permitted destination site.

## ***Direction/Recommendations From the AB 117 Report***

The AB 117 Report Recommendation #4 calls for reform of the manifest system. The report recommended that the existing manifest system be continued with five modifications, as follows:

1. "Close the loop" on accountability (i.e., have copies of manifests returned to IWMB for monitoring).
2. Account for imported scrap and used tires.

3. Provide for “one time hauls” to support amnesty days and individual cleanup of small tire piles:
4. Increase from five to ten the maximum number of waste and used tires that can be transported without having to obtain a waste tire hauler permit.
5. Develop a process to allow a hauler to temporarily substitute a replacement vehicle for a permanently registered vehicle.

### ***Direction Provided by SB 876***

SB 876 legislation mandated changes to the tire hauler program. In particular, it provides for a reform to the manifest system and the development of a new manifest form. SB 876 mandated the following:

1. “Close the loop” on accountability by requiring that copies of each manifest are returned to IWMB for monitoring.
2. Increase from four to nine the maximum number of waste and used tires that can be transported without having to obtain a waste tire hauler permit.
3. Provide for “one time hauls” to support amnesty days and individual cleanup of small tire piles.
4. Enhance the manifest system and make the manifest available in electronic format, which would make it possible to submit information to the IWMB electronically.
5. Change the placement of the decal from the driver’s side door to the lower right hand corner of the windshield.
6. Increases the penalties from \$5,000 to \$25,000 levied for violations of the PRC pertaining to waste and used tire hauling.

Under PRC Section 42961.5, the manifest is referred to as the *California Uniform Waste and Used Tire Manifest* and must be originated by the generator. In the past, the manifest was distributed to registered haulers and it was their responsibility to provide a copy to the generator when the tires were picked up and after the tires reached the end-use destination (if the generator requested a copy).

With the new mandates in SB 876, the manifest is distributed to generators in addition to haulers. One of the first tasks to accomplish this mandate, in addition to developing a new manifest form, is to identify waste and used tire generators and to determine how the new mandates will be implemented. Another major change to the manifest system is that the completed manifest copies must be sent to IWMB by the generator, hauler, and end user in order to “complete the loop.”

### ***IWMB’s Strategic Plan and Objectives***

The Waste and Used Tire Hauler Program and Manifest System Activities supports Goal 4 of the Board’s Strategic Plan as follows:

**Goal 4:** Manage and mitigate the impacts of solid waste on public health and safety and the environment and promote integrated and consistent permitting, inspection and enforcement efforts.



**Objective 3:** Promote increased development and use of effective waste management technologies.

**Strategy A:** The new manifest system soon to be implemented will increase the ability of the Board to track the movement, use and disposal of used and waste tires throughout the state.

**Objective 4:** Intensify efforts to prevent illegal dumping and, where necessary, clean up illegally disposed waste and waste tire sites.

**Strategy A:** The Interagency agreement with the CHP through the use of roadside checkpoints has helped the Board identify and take enforcement action against unregistered waste tire haulers.

## ***The Plan***

### **Objectives**

1. Bring all generators of used and waste tires in the state into compliance with the manifest requirement by the end of 2004.
  - a. Develop and test the new paper manifest form by June 2003. To minimize any negative impact that this new form will have on users, IWMB will conduct a pilot program with generators and haulers to test the efficiency of the new paper manifest form.
  - b. Identify and train generators on the new manifest system requirements by May/June 2003. The Waste Tire Hauler Program proposes to identify and contact the estimated 11,000 generators of used and waste tires and train them on the use of the New Manifest System.
  - c. Deploy new manifest form to generators and haulers by July 2003. The Waste Tire Manifest Program proposes to improve the tracking of used and waste tires and create a system of accountability for the generators and haulers by developing a new manifest form requiring submittal of copies to IWMB by all entities. Data will be entered into an electronic database for analyses of tire movement by IWMB staff.
2. Establish an electronic submittal process for the manifest system by June/July 2003.

The Waste Tire Manifest Program proposes to create an electronic version of the used and waste tire manifest form (Electronic Data Transmission) and make it possible for generators and haulers to submit the form to IWMB electronically.

Greater detail on program activities is given below.

### **Program Activities**

The Waste Tire Hauler Program is currently staffed with four and a half full-time positions. Two and a half positions\* are located in the Special Waste Division and the other two are in the Administration and Finance Division to support the data management needs of the program..

\* One position is on loan to the Board Office for a special assignment.

**Proposed Funding:**

FYs 03/04-07/08.....\$490,000 per FY

***California Highway Patrol***

In FY 97/98, the IWMB entered into a \$200,000 Interagency Agreement with CHP to create a training video on the waste tire hauler regulations for use in training law enforcement officers statewide. In addition to the training video, the CHP and IWMB staff created a pamphlet (English and Spanish) listing requirements for hauling waste tires and procedures for becoming registered as a waste tire hauler. Staff recommends continuing efforts with the CHP by entering into an Interagency Agreement with the CHP Motor Carrier Unit to conduct enhanced vehicle checkpoints throughout the state to ensure compliance on waste tire haulers. Additionally, CHP, acting in the role of the State Police, will be used for the following: to conduct legal process service; assist IWMB staff in investigations; and perform other enforcement-related activities for IWMB.

**Proposed Funding**

FYs 03/04-07/08.....\$400,000 per FY

***Manifest System***

To develop the expanded manifest form and program, the following steps are required:

1. Identify the estimated 11,000+ generators.
2. As an interim measure, the current manifest forms will be mailed with detailed instruction sheets.
3. Generate a new manifest form to meet the new requirements that is compatible with the electronic version.
4. Develop regulations to implement the new manifest format, processing requirements, electronic submittal process, and electronic database.
5. Test the new form with waste/used tire generators and haulers in the state for the paper manifest initially and then the electronic form.
6. Develop an electronic database system to receive manifest information in both paper and electronic version.
7. Monitor the manifests sent to IWMB by the generators, haulers, and end users/disposal sites, quarterly. Once the manifests are received they will be entered into the database;
8. Develop a training program on the use of the manifest for both the paper and electronic version; and
9. Develop a training program to assist Mexican waste and used tire haulers to meet IWMB's legal requirements for hauling tires in California.

**Proposed Funding**

The new manifest program will identify illegal haulers, operators not using the manifest, and those who use manifests that are not complete or correct. Proposed funding for ongoing program costs are \$ \$1.11 million for FYs 03/04 -05/06 and \$700,000 for FYs 06/07 and 07/08.

## ***Performance Measures***

To evaluate the program's success in achieving its objectives, the following measures are proposed (baseline data will be collected during calendar year 2004):

1. Percent of generators identified and contacted by program staff by March–June 2003.
2. Percent of identified and contacted generators trained on registration and manifest requirements by December 2003.
3. Percent of identified used and waste tires generated, using IWMB's historical data that are reported under the paper manifest system in 2004.
4. Percent of identified used and waste tires generated, using IWMB's historical data, that are reported under the paper and electronic manifest systems in 2005.
5. Amount of penalties levied for violation of the PRC pertaining to waste and used tire hauling.

***Proposed Five-Year Budget for the Waste and Used Tire Hauler Program and Manifest System***

**Table 9: Waste and Used Tire Hauler Program and Manifest System Budget**

<b>Program Area</b>	<b>FY 03/04</b>	<b>FY 04/05</b>	<b>FY 05/06</b>	<b>FY 06/07</b>	<b>FY 07/08</b>
Hauler/Manifest Staff	\$ 444,000	\$ 444,000	\$ 444,000	\$ 444,000	\$ 444,000
CHP	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 600,000
Hauler Program & Manifesting	\$1,110,000	\$1,110,000	\$1,110,000	\$700,000	\$700,000
<b>Totals</b>	<b>\$1,954,000</b>	<b>\$1,954,000</b>	<b>\$1,954,000</b>	<b>\$1,544,000</b>	<b>\$1,544,000</b>

# Appendix A

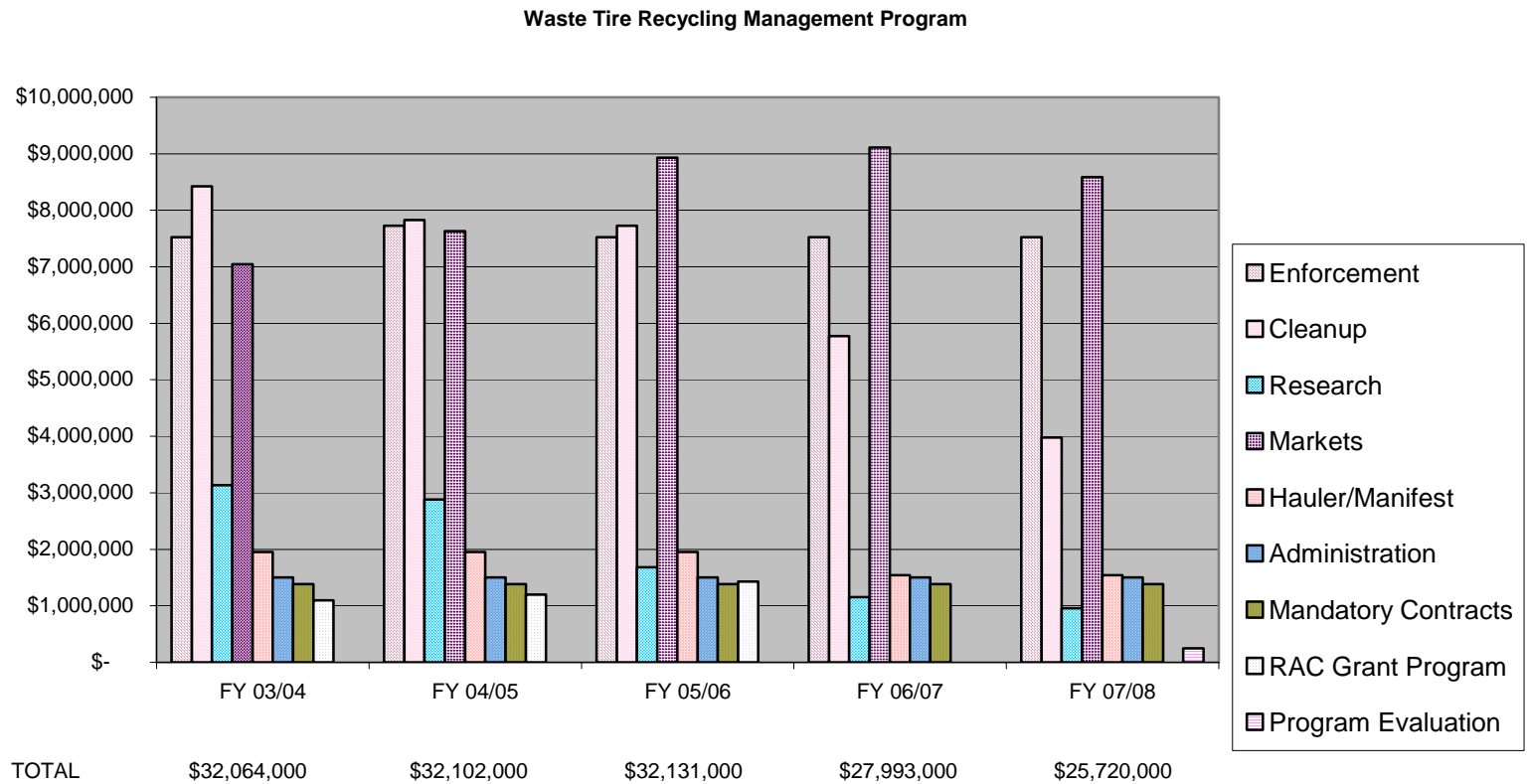
## Total Waste Tire Management Proposed Funding for FYs03/04–07/08

Program Area	FY 03/04	FY 04/05	05/06	06/07	07/08	Totals for All FYs
Enforcement	\$7,525,000	\$7,725,000	\$7,525,000	\$7,525,000	\$7,525,000	\$37,825,000
Cleanup*	\$8,425,000	\$7,825,000	\$7,725,000	\$5,775,000	\$3,977,000	\$33,727,000
Research	\$3,132,000	\$2,882,000	\$1,682,000	\$1,154,000	\$954,000	\$ 9,804,000
Markets	\$7,044,000	\$7,632,000	\$8,932,000	\$9,111,000	\$8,586,000	\$41,305,000
Hauler and Manifest	\$1,954,000	\$1,954,000	\$1,954,000	\$1,544,000	\$1,544,000	\$8,950,000
Administration	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$7,500,000
Mandatory Contracts	\$1,384,000	\$1,384,000	\$1,384,000	\$1,384,000	\$1,384,000	\$6,920,000
RAC Grant Program	\$1,100,000	\$1,200,000	\$1,429,000	\$0	\$0	\$3,729,000
Program Evaluation	\$0	\$0	\$0	\$0	\$250,000	\$250,000
<b>Totals</b>	<b>\$32,064,000</b>	<b>\$32,102,000</b>	<b>\$32,131,000</b>	<b>\$27,993,000</b>	<b>\$25,720,00</b>	<b>\$150,010,000</b>

\* Farm and Ranch Solid Waste Cleanup and Abatement Grant Program - spending authority separate from the Tire Fund's spending authority.

# Appendix B

## Waste Tire Recycling Management Program for FYs 03/04-07/08



# Appendix C

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## **Accomplishment Based on Performance Measures**

### **Baseline Data for Fiscal Year 01/02**

**Enforcement** - *To evaluate the program's success in achieving its objectives, the following measures are proposed (baseline data will be collected during FY 01/02):*

1. Increase the number of inspections conducted by program staff by 20 percent per year through 2006.

During the baseline year 2001/02, Board staff conducted 245 inspections of permitted and unpermitted waste tire facilities and sites. These inspections resulted in the issuance of 109 Letters of Violation, 22 Cleanup and Abatement Orders, 10 Administrative Complaints and one Criminal Complaint.

During this same period, eight local jurisdictions conducted 2595 inspections under the Local Government Waste Tire Enforcement Grant program. These inspections resulted in the issuance of 367 Letters of Violation.

2. Increase the proportion of successful legal actions (those resulting in fines or penalties awarded).

Legal action is almost entirely dependent upon potential actions being referred by inspection staff. The successful legislation in 2002, which gave the Board the right to attach a lien for recovery costs, ensures that any legal action taken will be "successful." Therefore, this is not a relevant performance measure.

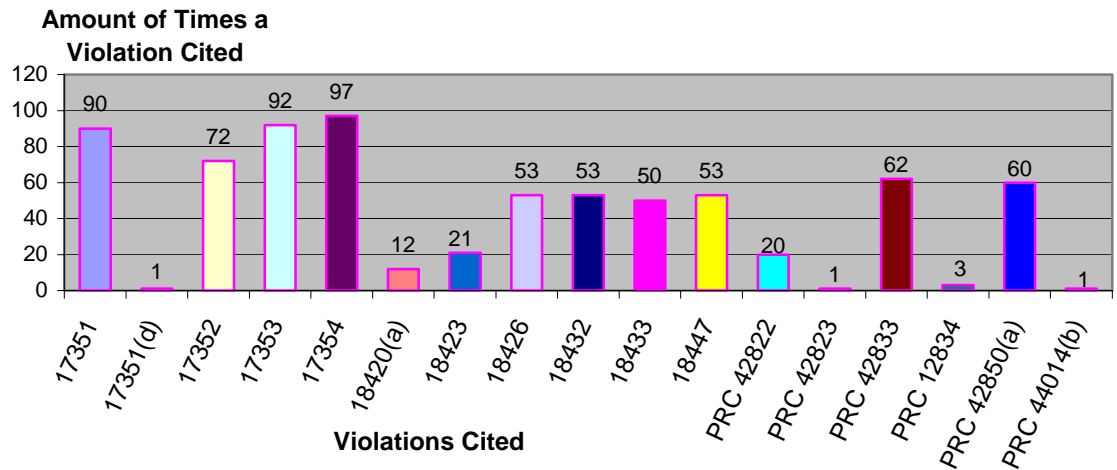
Service of process remains our trigger issue. So a performance standard could call for increasing our effectiveness in remediating sites and liening properties where the responsible party is unable to be located and/or served.

The Legal Office is implementing a system where we take a number of concrete steps to expeditiously establish our "due diligence" in attempting to locate responsible parties. Once this has been accomplished, we are in a strong position to obtain a judicial order permitting the service of an unlocatable responsible party to be effected "by publication." This is accomplished by placing a notice in a newspaper of general circulation directed at the responsible party, notifying him of the pending proceeding. Once the responsible party fails to respond, we can obtain access to the property for remediation, and thereafter lien the property for the cost of the remediation.

This new system is expected to increase the number of sites we are able to expeditiously process from the initial inspection stage through remediation, regardless of the difficulties we may encounter in serving the responsible party.

3. Track the number of documented violations to determine whether they are increasing or decreasing over time

During the baseline year 2001/02, Board staff documented 741 violations of waste tire statutes and regulations. These are broken down as follows:



Board staff did not have a system in place during the base year to track the violations reported by local jurisdictions. In subsequent years, these data will be reported and displayed as shown above for Board staff inspections. While it is important to display these inspection results to demonstrate either an increase or decrease in violations, these data are also valuable as a means of identifying specific areas where training is needed for both facility and site owners and operators and for inspectors.

4. Track the number of illegal sites that are closed or become permitted.

During the base year 2001/02, 32 illegal sites were closed and cleaned up. These actions were the result of various levels of warnings and enforcement actions on the part of Board staff. 19 sites were cleaned up after the issuance of Letters of Violation (LOV), which are notices, sent to property owners, informing them they are violating the law and specifying a time period to come into compliance. 10 sites were cleaned up after issuance of Clean Up and Abatement Orders (CAO), which are the first level of formal enforcement action if compliance is not achieved by the LOV. The CAO restates the violations, specifies a time frame to clean up the site, and puts the owner on notice that penalties will be assessed if compliance is not achieved. Three sites were cleaned up by the Board contract after issuance of Administrative Complaints (AC), which are the second level of enforcement action. The AC assesses penalties in addition to specifying a timeframe for compliance.

Board staff did not have a system in place during the base year to track similar results reported by local jurisdictions. In subsequent years, these data will be reported and displayed as shown above for Board staff.

5. Gradually reduce the number of newly discovered illegal sites (through CHP surveillance or local enforcement) on an annual basis.

The Board's authority encompasses waste tire sites of greater than 500 tires. During the base year 2001/02, 23 such sites were discovered.

6. Increase the number of applicants participating in local government enforcement grant program.

During the base year 2001/02, eight local jurisdictions (five counties and three cities) participated in the grant program. As a result of changes in procedures and funding



approved by the Board in the summer of 2002 and an aggressive marketing program conducted by Board staff, the number of participating local jurisdictions in subsequent years will increase dramatically.

7. Increase the number of local government entities delegated enforcement authority.

The Board has increased the number of local government entities to assist in enforcement actions. Due to a successful outreach program and changes in the enforcement grant program, the number of local entities submitting enforcement applications has increased from eight grantees to twenty-five.

The Board has chosen to focus local efforts on surveillance and inspections. Board staff plans to conduct training of local agencies on inspection and surveillance techniques and report writing. To ensure consistent enforcement actions across the entire state, any necessary enforcement actions involving litigation will be referred to Board staff.

**Cleanup -** *To evaluate the program's success in achieving its objectives, the following measures are proposed (baseline data will be collected during FY 01/02):*

1. Complete the long-term waste tire remediation projects within five years.

The tire fire remediation activities for the Westley tire fire are nearly complete. To date the Board has removed an estimated 290,000 tons of contaminated materials and expended approximately \$17 million.

The contract for the Tracy tire fire remediation was awarded in January 2003. It is anticipated that the remediation of this site will be completed within a three-year period.

2. Complete the short-term waste tire remediation projects referred by IWMB's Waste Tire Enforcement Program on an annual basis.

During FY 01/02 4 sites were referred. Their owners cleaned up 3 sites and one site has been approved by the Board to be cleaned up as a Board managed project. See Table 6, which shows by fiscal year when the site was put on the list and if they have been cleaned up by owner or through cleanup grants.

3. Increase the number of waste tire cleanup grants issued to local governments on an annual basis.

Baseline of 9 grants issued in Fiscal Year 01/02. NOFA for this fiscal year is scheduled to be released in January 2003. Award of grants is scheduled for March 2003.

4. Increase the number of waste tire amnesty grants issued to local governments on an annual basis.

For FY 2001/2002, there were 22 grantees awarded for total \$330,817.34, with total matching fund of \$309,179.16. (The maximum individual grants awards of \$20,000, no JPAs). For FY 02/03, 11 grants awarded \$321,247 with total matching fund of \$201,738.28. (The maximum individual awards of \$20,000, but allowed JPA to maximum \$50,000 for three or more districts in JPA.) Due to the shortage of 50 % match fund request. There were six grantees (most of them were in rural area) applied only from \$2,500 to \$9,051.08 grant for FY 2001/2002. For the next cycle FY 2003/2004, eliminate matching request may help rural applicants to get the grant.

5. Increase the percentage of tires remediated through the farm and ranch cleanup grants issued to local governments on an annual basis.

The Farm and Ranch Cleanup Program reports that 2,103 tires were cleaned up in Fiscal Year 01/02.

5. With the cooperation of OSFM, develop a tire fire response protocol and update and amend the Uniform Fire Code within five years.

In January 2002, the Board entered into an IAG with the OSFM to update the tire fire-training program and will work in conjunction with CIWMB in providing training information/technical assistance to local fire jurisdictions throughout the State of California. OSFM will also promulgate changes to the California Fire Code for enforcement consistency with the Public Resources Code/California Code of Regulations pertaining to waste tire storage.

In May 2001 CIWMB entered into a contract with Environmental Engineering and Contracting, Inc. to convene a two-day working consisting of 8 experts in the field of tire pile fires and related environmental and health/safety issues. The workshop was held and the contractor is in the processing of developing the written reports which summaries the findings and recommendations of the panel of experts. This written report will be incorporated into the tire fire protocol training materials by the OSFM.

**Research** - *To evaluate the program's success in achieving its objectives, the following measures are proposed (baseline data will be collected during FY 01/02):*

1. Under contract with IWMB, OEHHA will complete a waste tire combustion toxicity report by December 2001.

The Board entered into an interagency agreement with the Office of Environmental Health Hazard Assessment to complete this report. The report identified the major chemical constituents in smoke from burning tires, the toxicity of those chemicals and the potential effects on human health from exposure to smoke from burning tires. The report was completed and submitted to the Legislature in December 2001.

2. Under contract with IWMB, specified major tire manufacturer(s) will increase the amount of recycled content in new tires within five years.

Recycled-Content - \$228,770 awarded to contractor. Nevada Automotive Testing Center (NATC) is working on 2nd task - contacting stakeholders and manufacturers in the industry. (Contract Period June 30, 2002 to May 30, 2003 it is extendable.

3. Determine the viability of pyrolysis-type conversion processes.

Staff is currently in the process of selecting a contractor to determine the viability of pyrolysis type conversion process by identifying technology changes and how this technology is affected by the current economic environment for tires. This will be an update to the report was done by Cal Recovery and was funded by the Board back in July 1995. The RFP for this contract should be released soon and the Board will make the award in April.

Currently there are no commercially operating pyrolysis systems in the United States. The proposed technology evaluation and economic analysis report will help to establish a baseline for evaluating future proposal received by staff.

4. Determine the viability of energy recovery from waste tires, and establish optimum operational parameters.

Over the past 12 years of the tire recycling program more than 90 million tires have been consumed as fuel in energy recovery applications. During this same period the Board has expended nearly \$1.2 million dollars for projects related to energy recovery and tire combustion. No other tire diversion process has approached this level of viability.

5. Determine the viability of devulcanization.

The Scope of Work will be presented to the Board In February 2003. Staff is proposing to use the Request Of Proposal (RFP) process.

6. Increase the number of grants and contracts awarded to promote civil engineering applications of waste tires.

During FY 2000/2001, awarded three contracts to promote civil engineering applications of waste tires. These contracts included engineering and environmental Services contract with Dana Humphrey, engineering and oversight contract with IT corporation, and an interagency agreement with the University of California at Davis.

Under the environmental services contract with Dana Humphrey Consulting Engineering, CIWMB continued to provide education on, and promote the use of, tire shreds as an alternative to conventional lightweight fill materials in highway construction projects. This contract has allowed the Board to partner with CalTrans to construct a highway off-ramp at Dixon Landing using tire shreds and the Valley Transportation Authority to use tire shreds as a vibration dampening material in their light rail system in San Jose.

The contract with the IT corporation was to provide engineering and construction oversight of Board sponsored projects utilizing waste tires. IT assisted the Board in both the Dixon Landing project and the San Jose Project.

The contract with the University of California will investigate the seismic dampening properties of tire shreds in the design of bridge abutments. The application has the potential to use waste tires in the design of structures in seismically active areas of the state.

7. Investigate and evaluate potential methods that could increase the life span of tires within five years.

The Board awarded a contract to Symplectic Engineering Corporation to investigate methods for increasing tire longevity. The final report should be available early in the summer of 2003.

8. Investigate and identify potential methods to recycle and reuse byproducts created from the processing of crumb rubber.

Awarded \$99,567 to a contractor. CalRecovery is working on 2nd task - the survey to stakeholders. (Contract Period June 1, 2002 to June 30, 2003 it is extendable).

9. Increase the percentage of RAC used in highway projects in California over the next five years.

Caltrans annually reports to the Board on its usage of RAC. The Northern RACTC has entered into a contract with a private firm to develop a database of local government RAC projects, which will help to establish a baseline for RAC usage. Once the database is established (4-6 months) staff will have additional information

(along with the CalTrans information) to draw upon in developing the future RAC efforts of the Board.

10. To the extent possible, establish a list of experts and assure that third-party peer review is done on all research activities.

Feasibility Study for Establishment of Cross-Disciplinary California Tire Research Center at California Academic Institution was awarded to OEHHA in the amount of \$30,000.

The purpose of this contract is for the Contractor to provide the California Integrated Waste Management Board (Board) with findings and recommendations regarding three or more approaches for the Board to obtain the expertise needed to assist in tire-related issues including the possible establishment of a California Tire Research Center within an institution. The Contractor will focus on gathering information on a variety of academic institutions including the University of California, the California State University and private institutions regarding their interest and capacity to provide the Board with technical guidance regarding a variety of tire issues.

Due to delays in the contract process a new schedule is being submitted by OEHHA.

**Market Development** - *The performance measures for market development directly relate to the objectives stated in this section under "The Plan." Baseline data will be collected during FY 01/02 for all quantitative measures using the annual waste tire survey, grant and contract results, and end-uses reported in the enhanced manifest system. The performance measures below are presented in order of IWMB's hierarchy of waste management (source reduction; recycling and reuse; environmentally safe transformation; and lastly, landfill disposal).*

1. Percent of increase in public awareness of proper care and purchase of tires use of products made from recycled waste tires or purchase of retreaded tires, and proper disposal of waste tires. These educational attributes will be measured by contracting with an organization to conduct a survey every two years of California residents and comparing the results with baseline data obtained from the survey conducted during FY 01/02.

Chico State Contract IWM-CO183 original date of contract: June 1, 2002. Contract was late, and put into place on August 28, 2002 (3 months late). Chico has completed the literature review and will send via e-mail to CIWMB by mid-January. Chico State and CIWMB is currently working on the final steps of the survey questions. Chico State will present the findings of the survey at the April Board meeting. Staff is currently working on the SOW for the PSA's for April 2003.

2. Percent of increase in the level of recycling as described in the "Objectives" section, as measured from the survey and data from the enhanced manifest system.

CIWMB staff estimates that, of the approximately 31.6 million reusable and waste tires generated in 2000, approximately 22.9 million or 72.5 percent of the tires were diverted for various alternatives, including reuse, re-treading, and combustion. CIWMB staff estimates that, of the approximately 33.3 million reusable and waste tires generated in 2001, approximately 24.9 million or 74.8 percent of the tires were diverted.

3. Percent of increase of grant funds appropriated that are used by the end of the grant term, obtained by conducting an analysis of the grant program after all grants are closed.

The current grants funded under SB 876 have not closed. The tables below indicated the funds allocated and awarded. Once the grants close, staff will analysis the data against the funds spent.

### **Local Government Amnesty Day Grants**

<b>Fiscal Year</b>	<b>Total Funds Allocated</b>	<b>Total Funds Awarded</b>	<b>Total Funds Spent</b>
FY 01/02	\$500,000	\$330,817.00	TBD
FY 02/03	\$500,000	\$321,247.00	TBD

### **Playground Cover Grants**

<b>Fiscal Year</b>	<b>Total Funds Allocated</b>	<b>Total Funds Awarded</b>	<b>Total Funds Spent</b>
FY 01/02	\$800,000	\$565,648.00	TBD
FY 02/03	\$800,000	\$752,791.00	TBD

### **Track and Other Recreational Surfacing Grants**

<b>Fiscal Year</b>	<b>Total Funds Allocated</b>	<b>Total Funds Awarded</b>	<b>Total Funds Spent</b>
FY 01/02	\$1,000,000	\$954,879.66	TBD
FY 01/02	Reallocation Item	\$894,409.00	TBD

### **PRODUCT COMMERCIALIZATION GRANTS**

<b>Fiscal Year</b>	<b>Total Funds Allocated</b>	<b>Total Funds Awarded</b>	<b>Total Funds Spent</b>
FY 01/02	\$2,000,0000	\$1,929,389.00	TBD
FY 01/02	Reallocation Item	\$250,000.00	TBD
FY 02/03	\$2,000,000	\$1,964,799.00	TBD

4. Percent of increase in use of waste tire products by public agencies, including RAC, measured by analyzing annual reporting requirements and grant/contract final reports to IWMB.

Below are the data obtained for fiscal year 2001/02, however; these activities were funded prior to SB 876 legislation.

During fiscal year 2001/02 only two Waste Tire Grant Programs reported numbers from the recycled- content certification forms. Playground Cover and Track Surfacing grants (TR14), reported that 99.6% of the grant funds were used for purchasing of recycled-content products. The Local Government Amnesty Day grants (TR 13) reported that 3.6% of the grant funds were used for purchasing of recycled-content products.

The Waste Tire Program reported no data for their contracts during fiscal year 2001/02.

During fiscal year 2001/02 public agencies reported of the \$905,293.62 spent on tire-derived products, \$782,292.51 (86.42%) was spent on recycled-content products. And during the same period, public agencies reported of the \$5,718,151.59 spent on tires, \$772,995.86 (13.59%) was spent on re-treaded tires.

RAC- CalTrans reported 2,698,778 tires used in 2000 and 1,964,953 tires used in 2001.

5. Percent of reduction in the number of waste tires disposed in landfills annually, based on data collected for the annual report and from the enhanced manifest system.

In calendar year 2001, 8.4 million tires were disposed of in a landfill.

6. Level of satisfaction with grant/contract management based on staff surveys conducted when the grants/contracts close.

A customer service comment form will be developed to obtain feedback. Staff plans on sending the form out to all grantees as the grants close.

7. Improve grant administration by streamlining the grant administration process by identifying time-consuming and/or unnecessary steps.

During FY 2001/02 staff participated in the development and implementation of a new Grant Management System (GMS) that streamlines the administration of grant management. Also in 2002, the Office of Organizational Effectiveness conducted an investigation on the grant administration process. In addition, during fiscal year 2002/03 staff streamlined the application process for the local enforcement grants. Further, during fiscal year 2002/03 grant writing workshops were conducted. Survey results from number 6 above will be used to determine if further changes are needed.

**Hauler and Manifest System** - *To evaluate the program's success in achieving its objectives, the following measures are proposed (baseline data will be collected during FY 01/02):*

1. Percent of generators identified and contacted by program staff by March–June 2002.

As of the spring of 2002, Board staff has identified more than 12,000 waste tire generators, waste tire haulers, and waste tire end-use facilities. To date, Board staff has contacted 585 of these operators, approximately 4.8 %. In the spring of 2003, Board staff will mail out contact letters to all of these operators, informing them of the impending new manifest program and issuing a unique Tire Program Identification Number (TPID) to each waste tire location. It is anticipated that as this program grows, more unknown generators will be added to this list.

2. Percent of identified and contacted generators trained on registration and manifest requirements by December 2003.

It is projected that the training portion of this new manifest system will commence in May-June 2003. Board staff feels that two, maybe three, training sessions will be held at each of the various statewide training locations during the 2003 calendar year in an effort to reach out to as many potential users of this manifest system as possible. This information will be reported in the 2004 report.

In addition, the Waste Tire Hauler Program is commencing (Jan 2003) with a quarterly newsletter to the waste tire haulers and an additional one is being considered for waste tire generators which allow added training and question & answer segments to cover any questions regarding the new manifest program or provide for comments or recommendations.

3. Percent of identified used and waste tires generated, using IWMB's historical data, which are reported under the paper manifest system in 2004.

This information will be tabulated when the waste tire manifest system is fully underway; however, there will be a ninety (90) day delay in the submission of the paper documentation, therefore the accuracy of this information in its entirety will not be known until April 2005.

4. Percent of identified used and waste tires generated, using IWMB's historical data, that are reported under the paper and electronic manifest systems in 2005.

This information will be tabulated when the Electronic Data Transmission (EDT) portion of the waste tire manifest system is fully underway; however, there will also be a ninety (90) day delay in the submission of this documentation as in the paper manifest system, therefore the accuracy of this information in its entirety will not be known until April 2006.

#### Chart Describing Funding Allocated in FY 01/02 verses amount spent in FY 01/02.

	FY 01/02	Remaining**	Re-Allocated***	Total Spent*
<b>Enforcement</b>				
CHP Contract	\$ -			\$ -
LEA Grants	\$ 2,000,000	\$ (1,235,196)		\$ 764,804
<b>Totals</b>	<b>\$ 2,000,000</b>	<b>\$ (1,235,196)</b>		<b>\$ 764,804</b>
				\$ -
CA District Attorney Assoc.			\$ 325,000	\$ 325,000
<b>Remediation</b>				
Long Term Remediation	\$ 6,000,000			\$ 6,000,000
Short Term Remediation	\$ 1,500,000			\$ 1,500,000
Cleanup Grants	\$ 1,000,000	\$ (536,391)		\$ 463,609
Amnesty Grants	\$ 500,000	\$ (169,183)		\$ 330,817
Emergency Reserve	\$ 1,000,000			\$ 1,000,000
Farm & Ranch Grants	\$ 333,000			\$ 333,000
OSFM Training	\$ 200,000		\$ 20,000	\$ 220,000
<b>Totals</b>	<b>\$ 10,533,000</b>	<b>\$ (705,574)</b>		<b>\$ 9,827,426</b>
DTSC Contract			\$ 600,000	\$ 600,000
RWQCB Contract			\$ 600,000	\$ 600,000
EEC Contract			\$ 15,000	\$ 15,000
<b>Research</b>				
Tire Combustion Toxicity	\$ 150,000			\$ 150,000

Increased Recycled Content	\$	200,000			\$	200,000
Pyrolysis	\$	50,000	\$	(50,000)	\$	-
Energy Recovery	\$	500,000	\$	(88,360)	\$	411,640
Devulcanization	\$	50,000	\$	(50,000)	\$	-
Civil Engineering Uses	\$	500,000	\$	(176,238)	\$	323,762
Increasing Tire Lifespan	\$	200,000			\$	200,000
Uses of Fiber & Steel	\$	100,000	\$	(433)	\$	99,567
Recycled RAC					\$	-
RAC Study	\$	600,000			\$	600,000
<b>Totals</b>	<b>\$</b>	<b>2,350,000</b>	<b>\$</b>	<b>(365,031)</b>	<b>\$</b>	<b>1,984,969</b>
CA Tire Research Center				\$	30,000	\$ 30,000
SF Environment				\$	25,000	\$ 25,000
<b>Markets</b>						
Tire Recycling Conference	\$	100,000		\$	30,000	\$ 130,000
Tire Care Brochure	\$	250,000				\$ 250,000
PSA	-	-	-	-		\$ -
Civil Engineering Uses	\$	500,000	\$	(500,000)	\$ -	\$ -
Playground Cover Grants	\$	800,000	\$	(234,352)	\$ -	\$ 565,648
Track Grants*	\$	1,000,000	\$	(45,120)	\$ 894,409	\$ 1,849,289
Commercialization Grants	\$	2,000,000	\$	(70,611)	\$ 250,000	\$ 2,179,389
Green Buildings	\$	300,000	\$	(53,862)	\$ 30,000	\$ 276,138
RACTC	\$	450,000				\$ 450,000
CalTrans Signs	\$	130,000	\$	(130,000)		\$ -
RMDZ Loan	\$	2,000,000			\$ 318,750	\$ 2,318,750
State Parks Contract	\$	200,000			\$ 80,000	\$ 280,000
Buy Recycled Conference	\$	50,000				\$ 50,000
CalMAX & WRAP	\$	20,000				\$ 20,000
Rebate Study	\$	80,000	\$	(32,000)		\$ 48,000
<b>Totals</b>	<b>\$</b>	<b>7,880,000</b>	<b>\$</b>	<b>(1,065,945)</b>	<b>\$</b>	<b>6,814,055</b>
Grant Writing Workshop				\$	25,000	\$ 25,000
Three East End Projects				\$	250,000	\$ 250,000
Park Playground/Access Grants	\$	-		\$	75,660	
RACTC Evaluation	\$	50,000	\$	(50,000)		\$ -
<b>Manifest</b>						\$ -
CHP Contract	\$	200,000				\$ 200,000
Manifest Contract	\$	2,400,000				\$ 2,400,000
<b>Totals</b>	<b>\$</b>	<b>2,600,000</b>				<b>\$ 2,600,000</b>
<i>Student Contract</i>				\$	67,641	\$ 67,641
OE&E Funds Available			\$	(215,000)		\$ (215,000)
<b>Grand Totals</b>	<b>\$</b>	<b>25,413,000</b>	<b>\$</b>	<b>(3,636,746)</b>	<b>\$</b>	<b>3,636,460</b>
					<b>\$</b>	<b>25,412,714</b>



<b>LEGEND</b>	
Some amounts are projections	+
Projects Not In 5-Year Plan	<i>Italic</i>
Reduced by \$100,000 due to	*
Applicant dropping out of cycle	
\$286 of this amount cannot be	**
spent for C&P Services	

### **\*\*\*Reallocation of FY 2001/2002 Funding**

In May 2002, the Board approved the reallocation of \$3,636,460 of FY 2001/2002 funding that remained unencumbered. The Board reallocated funding to seventeen different projects. Of these seventeen projects, nine were listed in the Five-Year Plan and received additional funding, and eight were new projects not listed in the Five-Year Plan.